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AUTHOR	Smith, Dwight; And Others
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ABSTRACT

This instructional package is one of two designed for regular vocational students in the vocational area of building maintenance and engineering. The fifty-six learning modules are organized into five units: floor care; general maintenance tasks; restrooms; chalkboards; and carpet care. Each module includes these elements: a performance objective page telling what will be learned, what materials will be needed, and how the student will be evaluated; information pages (not always included) which explain why the student is performing the activity and provide information needed; and job steps pages which detail steps necessary to do the tasks. Illustrations are included. (This document and CE 017 562 are one of four sets of learning modules on maintenance and engineering. The other three sets are written in formats designed for low reader, educable mentally impaired, and visually impaired students. The modules are part of a total set of over 1,300 written for different student populations. Graphics, dietetic assistant, small engine repair, and medical assistant are the other vocational areas covered.) (JH)

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ED 150083

CAPITAL AREA CAREER CENTER
Ingham Intermediate School District
611 Hagadorn Road
Mason, Michigan 48854

TO:

VOCATIONAL READING STRATEGIES PROJECT

BUILDING MAINTENANCE ENGINEERING
Senior Vocational

[VOL. I]

CE 017 561

building maintenance & engineering

unit: Floor Care

capital area career center

module: 2201 01 001 date: 12/6/76 level: 1

skill title: Dust Mopping (Resilient & Hard Floors)

developed & written by: Dwight Smith

visuals by: Sandra Starnaman

WORD GUIDE

RESILIENT - a term applied to "soft" tile floors, such as asphalt, vinyl, or vinyl asbestos.

BENCH BRUSH - a short-handled brush used to sweep dirt from corners, and from piles into a dustpan.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

How to dust mop resilient and hard floors in areas with chairs, tables, and desks.

AND IN ORDER TO DO THIS YOU WILL NEED:

- dust mop
- dust pan
- bench brush
- waste basket
- putty knife

WE WILL KNOW THAT YOU CAN DO IT WHEN:

No dust, dirt, or papers can be seen on the floor that you have dust mopped.

What is a bench brush?

A bench brush is ________________.

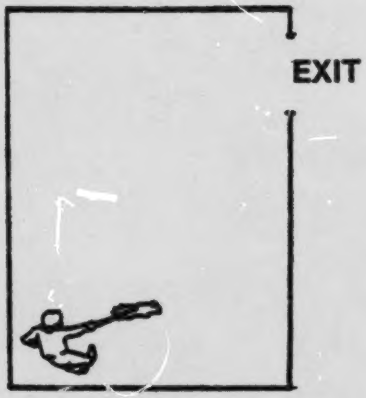
a. a tooth brush.
b. a brush as large as a bench.
c. a short-handled brush to sweep dirt from corners, and from piles into a dustpan.
d. a brush made from an old bench.

Hope you picked "c".

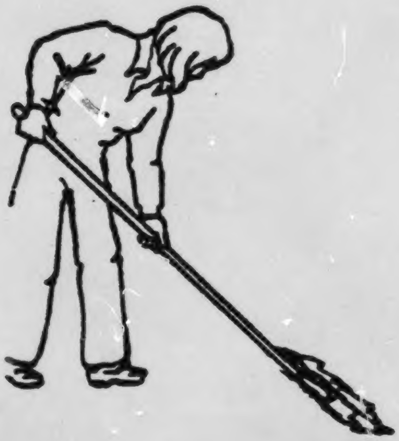
INFORMATION	MATERIALS	LOCATION OF MATERIALS
Be sure that you have an equipment checklist for the Floor Care Unit.		
Check off the equipment you will need to dust mop a floor.	Equipment Checklist	
When you have checked the equipment you think you will need, show your checklist to the instructor.		
Your instructor will tell you if you are to turn to the next page of this module.		

JOB STEPS

1. Go to the equipment storage area. Collect the equipment that you will need. Use your completed Equipment Checklist to be sure that you have all the equipment.
2. Take the equipment to the area to be dust mopped.
3. Using the bench brush, dust any registers, radiators, or corners. Push the dust on to the floor.
4. Begin dust mopping at the point farthest away from your exit. Dust mop toward the exit.

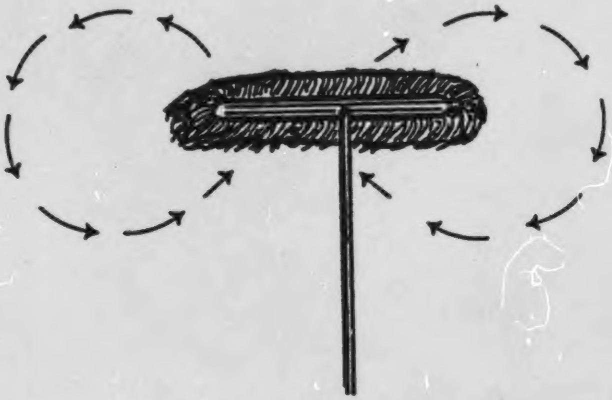


5. Hold the dust mop. Place your feet at least 18" apart so that you have good balance.
6. Place one hand near the middle of the mop handle and the other near the top. Place the mop so that the long sides of the mop DO NOT face you.

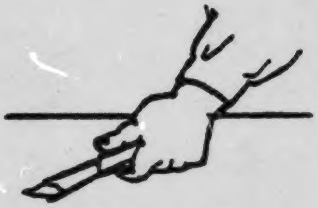


JOB STEPS

7. Push the dust mop to one side, then turn your wrists (and the dust mop) and bring the dust mop to your other side. The motion should form a figure eight. With this method you will be able to dust under chairs, tables, and desks.



8. Use your putty knife to remove objects or gum stuck to the floor.



9. Push the dirt into a pile.

10. Use your bench brush to sweep dirt on to the dustpan. Empty the dustpan into the waste basket.

11. When the floor has been dust mopped, return all equipment to the storage area.

12. Be sure to shake or vacuum the dust mop.

building maintenance & engineering

unit: Floor Care

capital area career center

module: 2201 01 002 -
date: 12/6/76 level: 1
skill title: Damp Mopping

developed & written by: Dwight Smith
visuals by: Sandra Starnaman

WORD GUIDE

WRINGER	Used to squeeze water from mops. Fits on a bucket.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

To damp mop a floor.

IN ORDER TO DO THIS YOU WILL NEED:

Mop

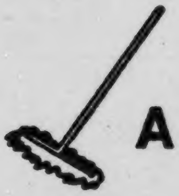
Wringer

Mop bucket

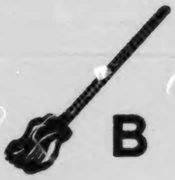
Mop handle

WE WILL KNOW YOU CAN DO IT WHEN:

No dirt or stains can be seen on the floor that you have mopped.



A



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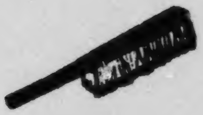
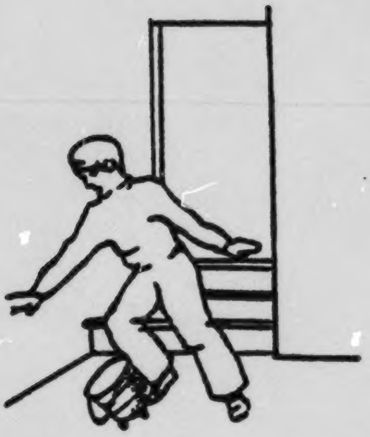


C

Which of the above is a damp mop?

We hope you said "B".

INFORMATION	MATERIALS	LOCATION OF MATERIALS
The floor should be dust mopped before you begin damp mopping. By damp mopping, you will remove all dirt and stains that are on the surface of the floor.		
Be sure that you have an Equipment Checklist for the Floor Care Unit.	1) Equipment Checklist	
Check off the equipment you will need to damp mop a floor.		
When you think that you have checked off all the equipment you will need, show your checklist to your instructor.		
Your instructor will tell you if you are to turn to the next page of the module.		



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*****************************************
*                                       *
*  CAUTION - Never leave your bucket in *
*  doorways or at the bottom of stairs. *
*                                       *
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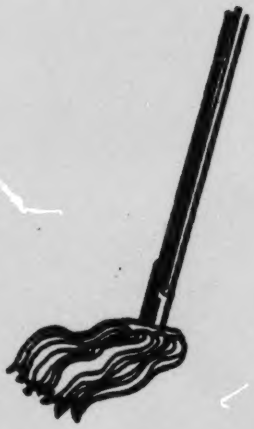
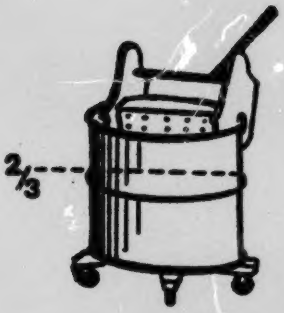
JOB STEPS

1. If the mop head and mop handle are not attached, do so.



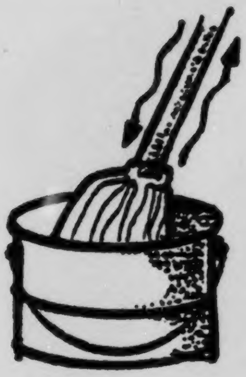
JOB STEPS

2. Fill one bucket 2/3 full with cold water. Attach the wringer to the bucket.



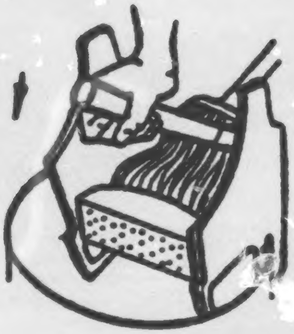
3. Move equipment to the area to be damp mopped.

4. Place clean mop in water and dip up and down many times.



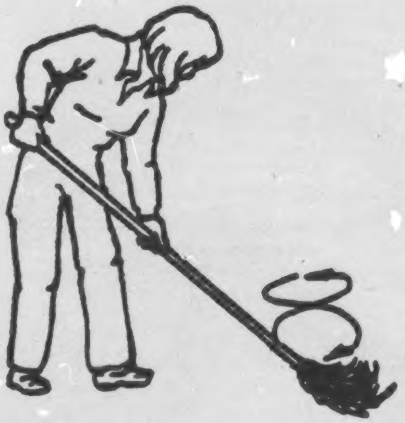
JOB STEPS

5. Put mop in wringer and squeeze very dry.



6. Begin mopping at the point farthest from your exit.

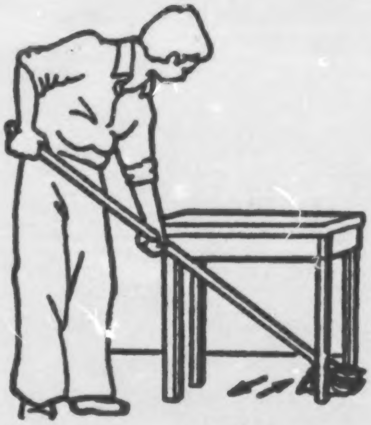
7. Place one hand near the middle of the handle and the other near the top. Swing the mop from side to side in a figure eight motion.



8. Always mop backwards toward your exit to avoid walking on wet floors.

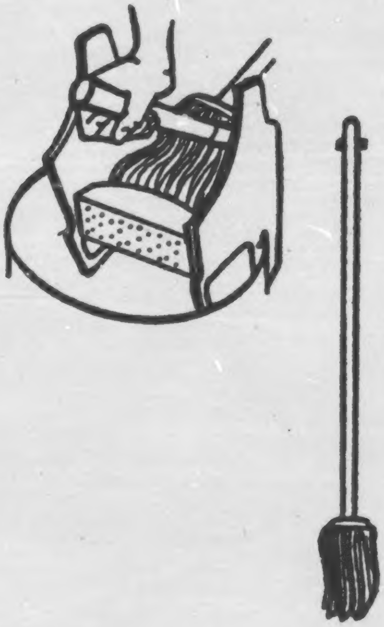
JOB STEPS

9. When mopping under tables and chairs, push and pull the mop.



10. When your mop is dirty, dip it into the water and wring it out.

11. When you are done mopping, rinse the mop, wring it out, and hang it up to dry. Dump the mop bucket and rinse it.



building maintenance & engineering

unit: Floor Care

capital area career center

module: 2201 01 003 date: 12-6-76 level: 1

skill title: Wet Mopping to Remove Dirt and Grease

developed & written by: Dwight Smith

visuals by: Sandra Starnaman

WORD GUIDE

2

NEUTRAL SOAP - plain detergent soap that contains no acids.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

To wet mop grease and dirt from a floor.

AND IN ORDER TO DO THIS YOU WILL NEED:

mop and handle

bucket and wringer

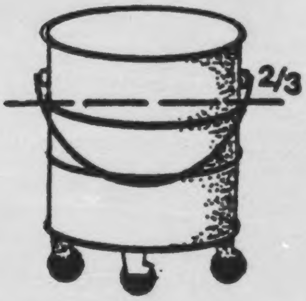
neutral soap

WE WILL KNOW THAT YOU CAN DO IT WHEN:

You have cleaned the grease and dirt from a floor.

1. If you do not remember how to mop, return to the module on damp mopping. (Module 2201 01 002).

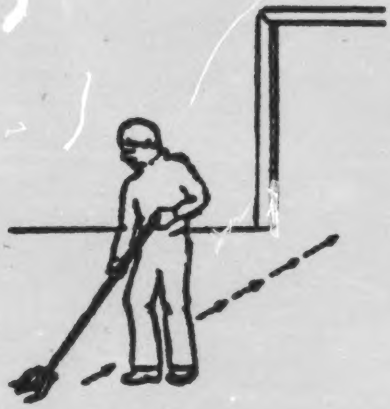
2. Fill one bucket 2/3 full with cold water.



3. Add neutral soap to the bucket of cold water. Ask your instructor to tell you how much soap to add.

4. Move your equipment to the work area.

5. Begin mopping at the farthest point from your exit.



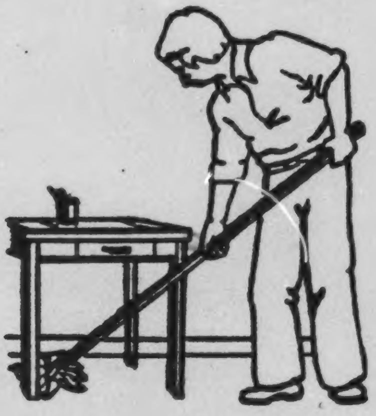
WORD GUIDE

HIGH TRAFFIC AREA - Doorways, corners, and areas that are walked on often.

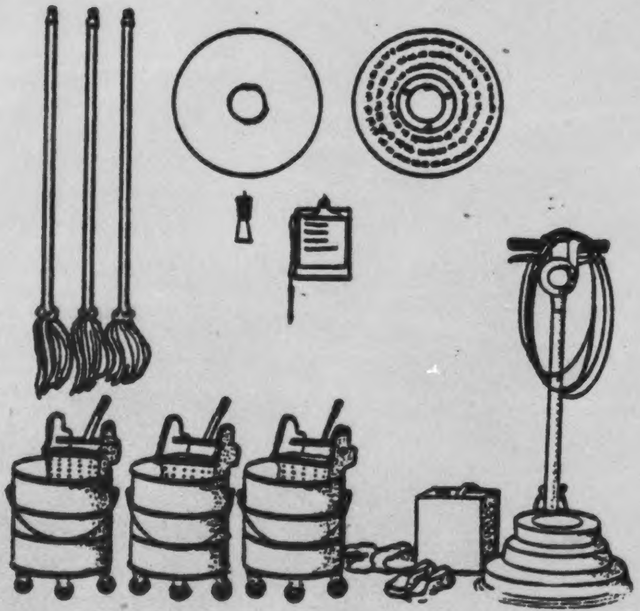
JOB STEPS

6. When mopping high traffic areas you may need to go over them a second time to remove all the dirt and grease.

7. Be careful not to splash walls or furniture.



8. When finished, clean your equipment according to what you learned in the module on damp mopping (Module 2201 01 002).



building maintenance & engineering

unit: Floor Care

capital area career center

module: 2201 01 004 **date:** 12/8/76 **level:** 1

skill title: Wet Mopping to Disinfect

developed & written by: Dwight Smith

visuals by: Sandra Starnaman

WORD GUIDE

GERMICIDAL DISINFECTANT - a solution that kills germs.

DISINFECT - to kill germs.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

To disinfect a restroom floor by wet mopping.

AND IN ORDER TO DO THIS YOU WILL NEED:

- mop and handle
- bucket
- wringer
- germicidal disinfectant

WE WILL KNOW THAT YOU CAN DO IT WHEN:

You have mopped a restroom floor with disinfectant.

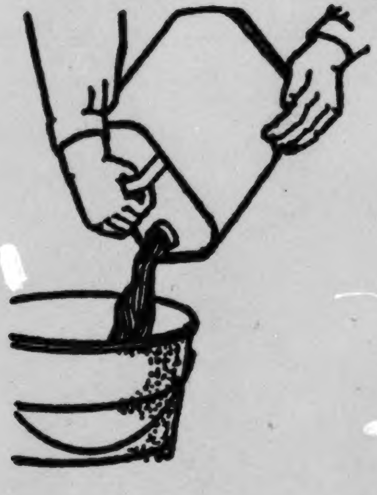
A disinfectant is ______________________. 3

a. a toothache.
b. part of a mop.
c. something to put on hot dogs.
d. a solution that kills germs.

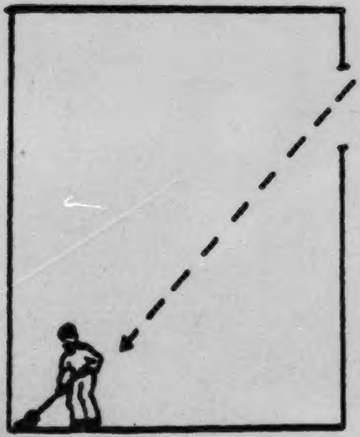
Hope you picked "d".

JOB STEPS

1. Fill a bucket 2/3 full with cold water.
2. According to the instructions on the disinfectant, add the disinfectant to the water.

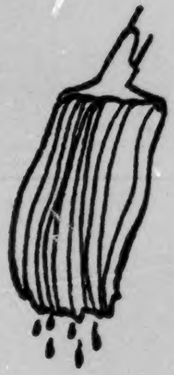


3. Move the equipment to the restroom to be disinfected.
4. Begin mopping in an area farthest away from the exit.

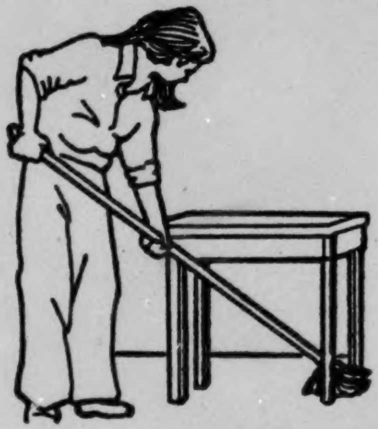


JOB STEPS

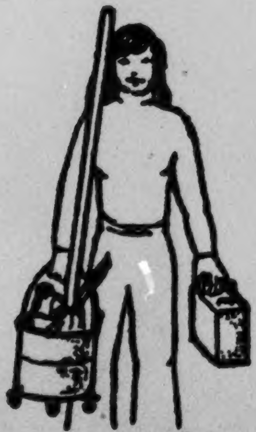
5. Begin mopping according to the module on damp mopping. Be sure that your mop is very wet with the disinfectant and water. (Module 2201 01 002).

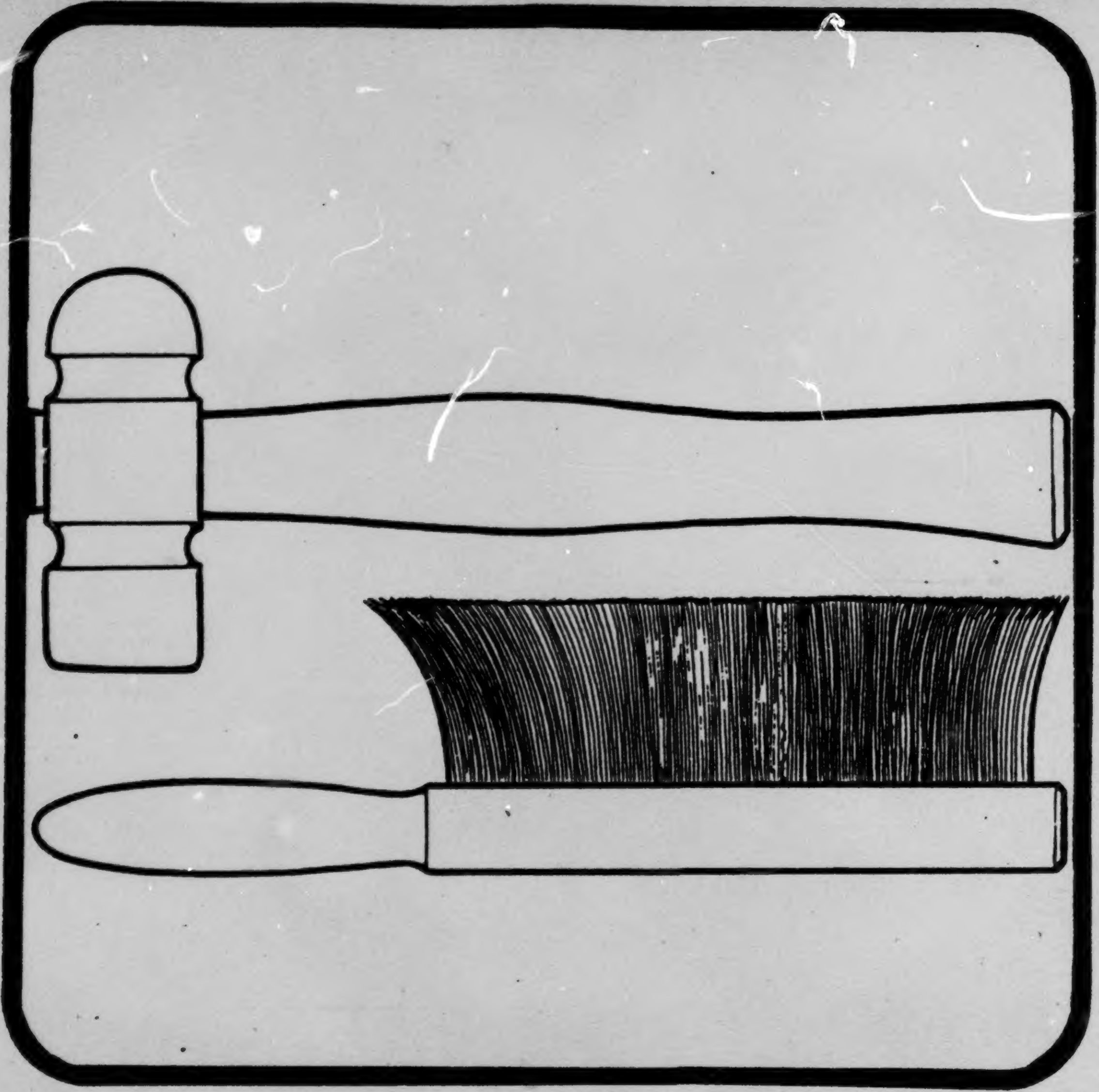


6. Be sure to run your mop along the corners and edges of the wall.



7. When finished, carefully clean all equipment and return to the storage area.





building maintenance & engineering

unit: FLOOR CARE

capital area career center

module: 2201 01 005 **date:** December 1976 **level:** II

skill title: Floor Stripping (Resilient Floors)

developed & written by: Jack Helder

visuals by: Sandra Starnaman

WORD GUIDE

STRIP	To remove old wax from a floor.
RESILIENT	A term applied to "soft" tile floors, such as asphalt, vinyl, or vinyl asbestos.

PERFORMANCE OBJECTIVE

You are going to learn:

To strip a resilient floor, by removing all old wax, dirt, and black marks.

And in order to do this you will need:

- 3 mop buckets
- 3 wringers
- 3 wet mops
- wool kick pads
- stripping pad
- buffing machine
- wax remover
- scrub brush
- rubber overshoes
- putty knife
- pencil and paper

We will know you can do it when:

You have watched and listened to the slide tape, and then have completed the job steps by stripping a resilient floor.

INFORMATION	MATERIALS	LOCATION OF MATERIALS
Why do you strip a resilient floor?		
Because old wax slowly becomes dull, dirty, and covered with black marks from shoes. Dusting and mopping will not clean this old wax. A new coat of wax will just make the floor harder to clean.		
By stripping off the old wax and scrubbing off the black marks, you can prepare a floor for a fresh coat of wax.		
NOW DO		
Watch and listen to the slide tape for Module 2201 01 005. You will be told how to strip a resilient floor.	1) 2201 01 005 slide tape	
Be sure that you have an EQUIPMENT CHECKLIST for the Floor Care Unit.	2) Equipment Checklist	
When you have finished the slide tape, continue this module by turning to the next page.		

What is a resilient floor?

A resilient floor is a floor made of__________.

a. bricks
b. old wax, dirt and black marks
c. banana peels
d. "soft" tiles, such as asphalt, vinyl, or vinyl asbestos.

Hope you picked "d".

JOB STEPS

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1. Make a diagram of all present furniture locations.

2. Move the furniture away from the area to be stripped.

3. Dust the area to be stripped--just as you learned in Module 2201 01 001.

4. Fill one bucket 2/3 full with warm or hot water.

5. Fill the second bucket 2/3 full with cold water.

6. With your instructor's help, add wax remover to the hot water bucket.

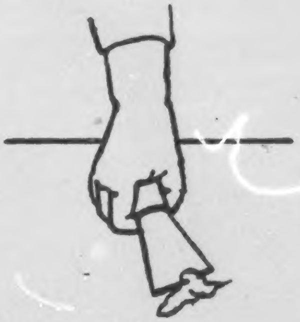
7. Move all equipment to the area to be stripped. Use the equipment checklist to be sure you have everything you need.

JOB STEPS

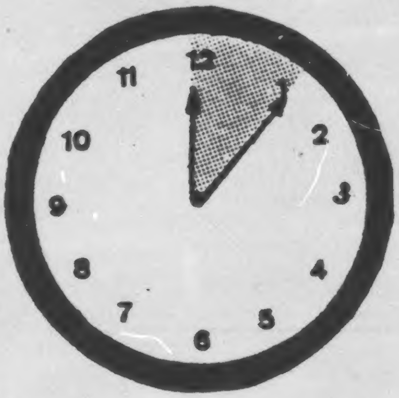
8. Put a clean mop into the bucket of hot water and wax remover solution. Dip the mop up and down many times in the solution.

9. Place the mop in the wringer. Push the handle down lightly. Leave the mop very wet.

10. Mop the area--just as you learned in Module 2201 01 003. Leave the floor very wet with the solution. Use a putty knife to remove anything stuck on the floor.

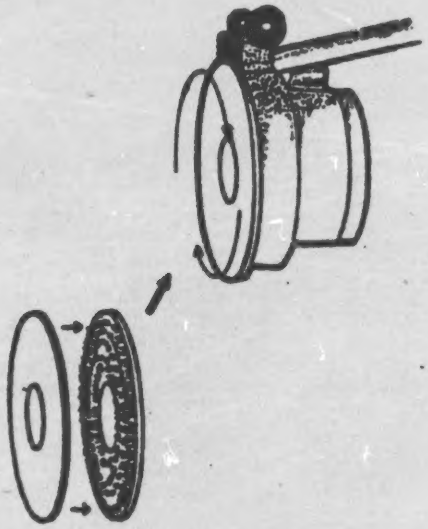


11. Allow the solution to remain on the floor for only 5 minutes. The floor must be damp during stripping.

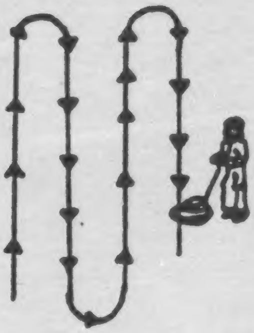


JOB STEPS

12. Attach the stripping pad to the scrub brush. Attach them to the buffing machine.



13. Move the floor machine to a point farthest from the exit and begin stripping operation.



14. Operate the machine slowly from side to side until the entire area has been stripped.

15. Remove the scrub brush and put the brush on the bucket with solution in it. The brush and pad must drip into the bucket.

JOB STEPS

16. Using the second mop, and second bucket of water, wet mop the entire area. Wet mop until all solution and dirt are removed.

17. Fill the third bucket 2/3 full with cold water.

18. Using a clean mop and the cold water, wet mop the entire stripped floor.

19. When the floor is dry, brush your hand over a spot. If there is a white dust on your fingers, re-mop the area.

20. Damp mop the entire area--just as you learned in Module 2201 01 002.

21. When the floor is dry, inspect the entire floor to be sure all old wax, dirt, and black marks have been removed.

22. Wipe any splatter marks from baseboards, walls, or furniture.

23. Return all materials and tools. Be sure all tools are cleaned.

building maintenance & engineering

unit: Floor Care

capital area career center

module: 2201 01 006 date: 12-6-76 level: ____

skill title: Waxing Floors

developed & written by: Dwight Smith

visuals by: Sandra Starnaman

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

How to wax a floor.

AND IN ORDER TO DO THIS YOU WILL NEED:

A clean mop and handle

Bucket

Wringer

Floor wax

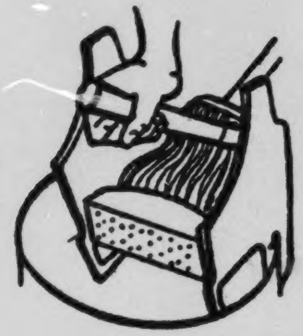
WE WILL KNOW THAT YOU CAN DO IT WHEN:

The floor you have waxed has an even coat of wax, with no streaks, dull spots or bubbles.

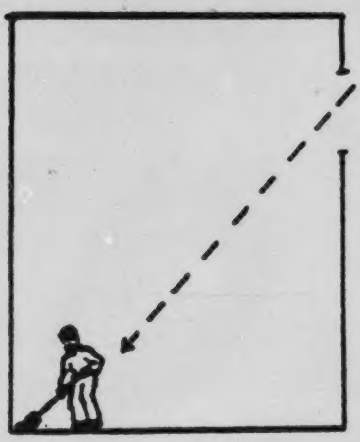
INFORMATION	MATERIALS	LOCATION OF MATERIALS
Before beginning the job steps for waxing a floor, you should be sure that the floor has been prepared. According to the condition of the floor, it may have to be damp mopped, wet mopped, or even stripped of old wax. Review modules 2201 01 002, 2201 01 003, and 2201 01 005 if you do not remember how to clean a hard floor.		

JOB STEPS

1. Gather all the equipment you will need to wax a floor.
2. Pour wax into your mop bucket to a depth of about 4 inches.
3. Move all equipment to your work area.
4. Move all furniture out of the work area. Be careful not to bang walls or bump furniture.
5. Place mop into the wax bucket. Then wring out the dripping mop, pushing down the wringer handle about 1/2 way. After you have squeezed some of the wax out, the mop should not drip wax.

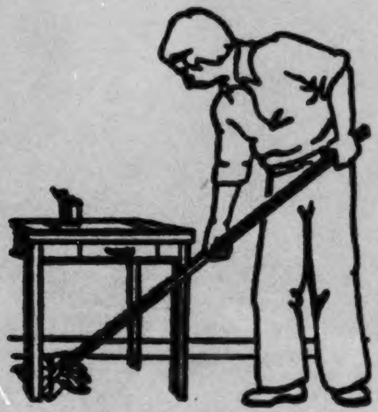


6. Begin waxing at a point farthest from your exit.

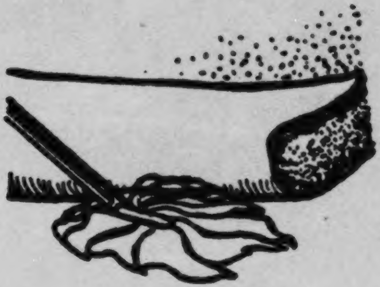


JOB STEPS

7. First wax along the outer edge of an area and around any furniture that remains. Be careful not to splash wax.

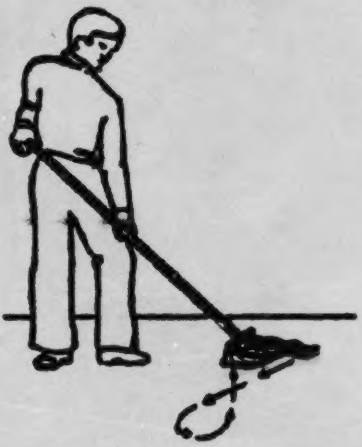


8. Lift up and fold back any carpets or rugs that were not removed. Wax around the carpets or rugs.



JOB STEPS

9. Apply the wax to larger surface areas by using the figure eight motion that you learned in the module on damp mopping. (Module 2201 01 002).



10. Place mop in the wax bucket and wring out as often as you need in order to apply an even amount of wax to the floor.

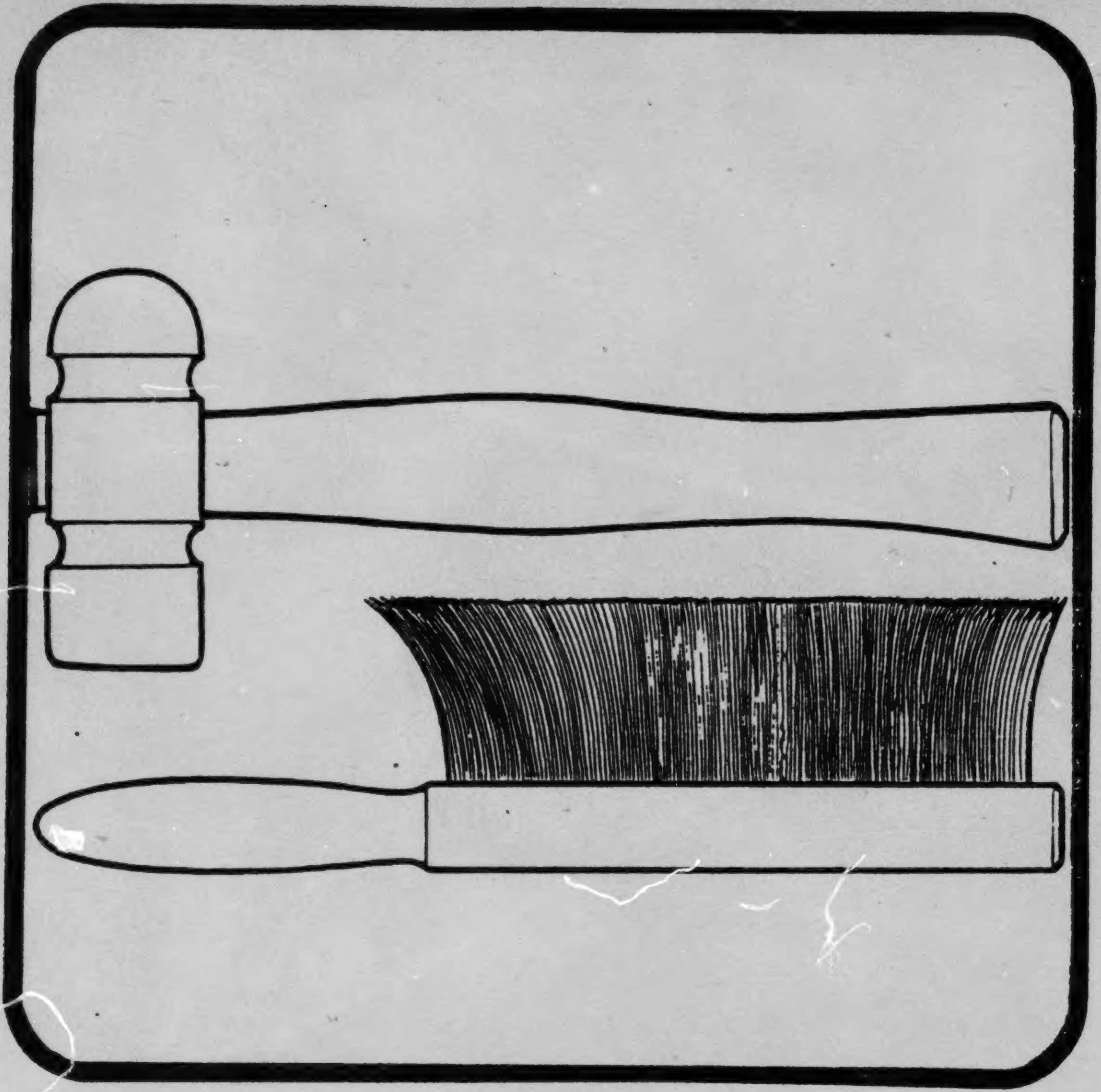
11. If a second coat of wax is needed, do not apply around outer edge as you did in step seven.

12. Return all equipment to the storage area.

13. Rinse out your mop and bucket with warm water. Be sure your mop is as dry as possible after wringing.

14. When wax is dry, replace rugs and furniture.

15. Return all materials and equipment to the storage area. Be sure all equipment is clean.



building maintenance & engineering

unit: FLOOR CARE

capital area career center

module: 2201 01 007 date: December 1976 level: I

skill title: Spray Buffing

developed & written by: Dwight Smith

visuals by: Sandra Starnaman

WORD GUIDE

GLOSS - Bright polish or shine.

SCUFF - Shoemarks or furniture scratches.

PERFORMANCE OBJECTIVE

You are going to learn:

How to spray buff a floor.

And in order to do this you will need:

- Floor buffer
- Spray attachment
- Spray bottle
- Floor wax
- Steel wool kick pad
- Buffing pad

We will know that you can do it when:

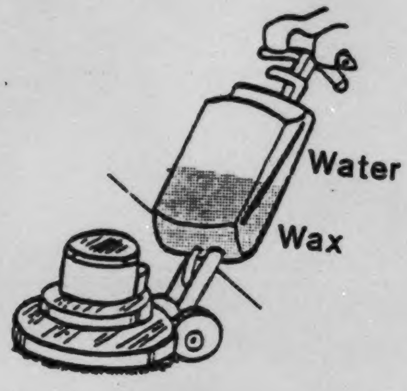
High traffic areas will be buffed to their original gloss, and scuff marks and black marks have been removed.

INFORMATION	MATERIAL	LOCATION OF MATERIAL
In this module you will use the floor buffer to spray buff a floor.		
Sometimes you may also spray buff a floor using an automatic floor machine. Ask your instructor when it is better to use the floor buffer.		

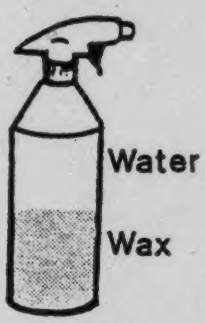
JOB STEPS

1. Get all the equipment you will need. Use your equipment checklist.

2. If you will be using a spray attachment for the floor buffer, fill the bottle half with water and half with wax.

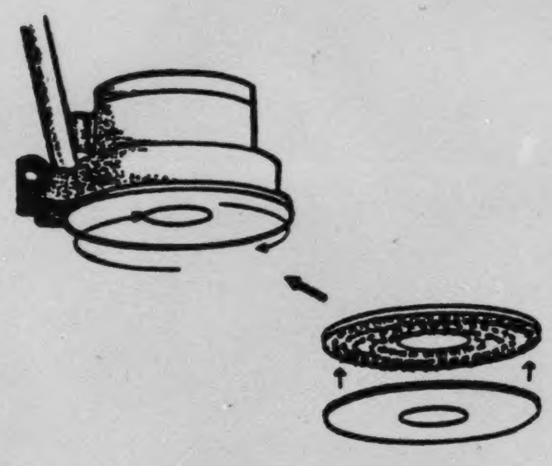


If you will be using a spray bottle, fill half with water and half with wax.



3. Move equipment to the work area.

4. Attach the spray buff pad to the brush and attach the brush to the machine.

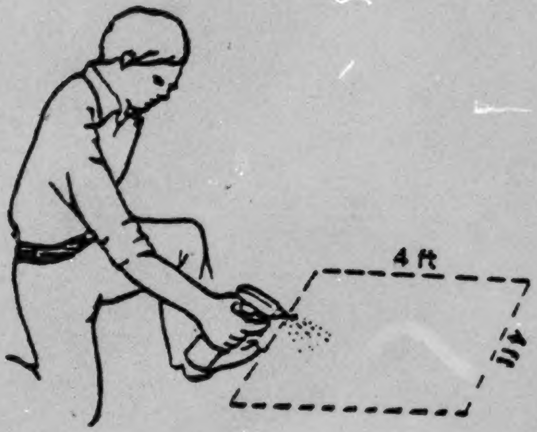


WORD GUIDE

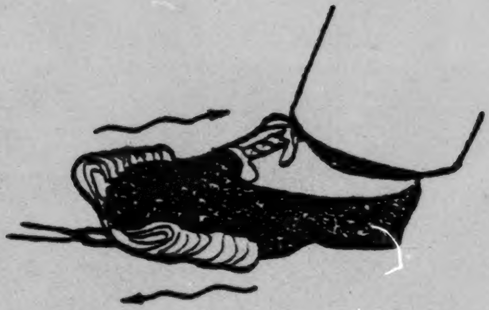
MIST - A thin cloud of water

JOB STEPS

5. Spray a fine mist of the water and wax solution on the area to be buffed. Cover an area no larger than 4 feet by 4 feet at one time.

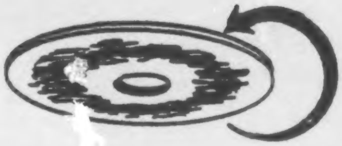


6. If the floor has black marks, remove them with the steel wool kick pad. Then buff over it.



JOB STEPS

7. Change your pad over from one side to the other when the bottom gets dirty.



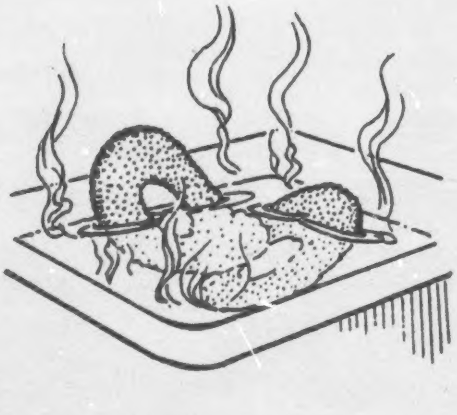
8. Buff the area dry with the floor buffer. Do this until the entire floor is spray buffed.

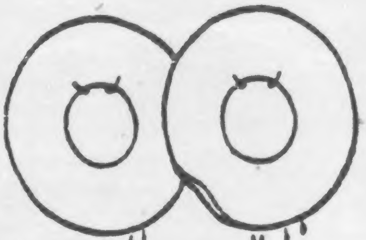
9. Dust mop the area you have buffed, according to module 2201 01 001 on dust mopping.

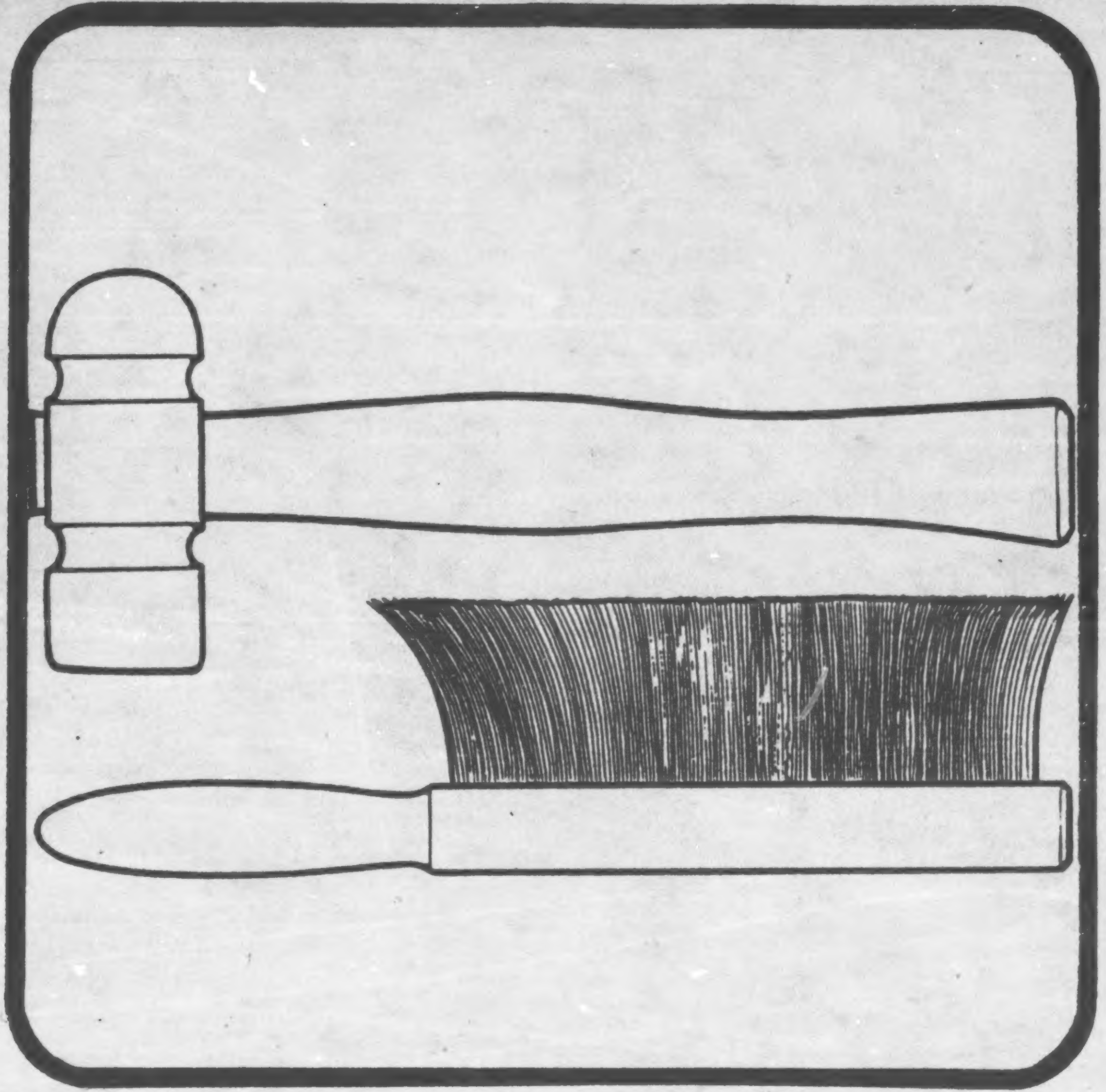
10. Return all equipment to the storage area.

11. Rinse out the spray bottle, or the spray attachment.

12. If the buffing pads are very dirty, wash them out in hot water. Hang them to dry overnight.







building maintenance & engineering

unit: FLOOR CARE

capital area career center

module: 2201 01 008 **date:** December 1976 **level:**

skill title: Sealing a Floor (Resilient Floors)

developed & written by: Dwight Smith

visuals by: Sandra Starnaman

WORD GUIDE

SEALER - A solution used to protect a resilient floor from marks and water.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

How to seal a resilient floor.

AND IN ORDER TO DO THIS YOU WILL NEED:

Clean mop and handle

Mop bucket

Wringer

Floor sealer

WE WILL KNOW YOU CAN DO IT WHEN:

You have applied an even coat of sealer that contains no streaks or bubbles.

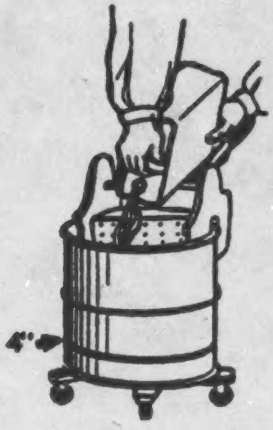
INFORMATION	MATERIALS	LOCATION OF MATERIALS
Before applying sealer to the floor, you must strip and rinse the floor as shown in Module 2201 01 005. If you do not remember how to strip a floor, watch the slide tape for module 2201 01 005.		

JOB STEPS

4

1. Select the equipment you will need.

2. Pour about 4 inches of sealer into your mop bucket.

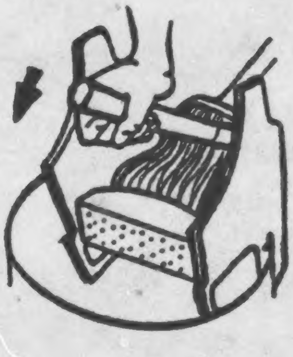


3. Take your equipment to the work area.

4. Begin work at the farthest point from your exit.

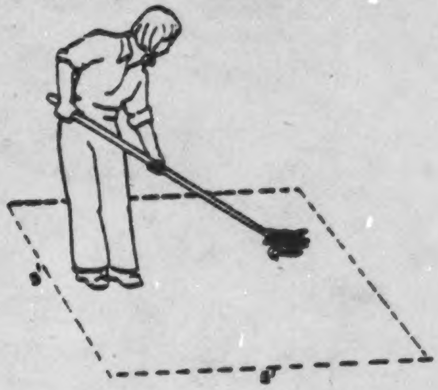
5. Dip your mop up and down in the sealer until you are sure it is fully wet.

6. Wring out a small amount of the sealer.

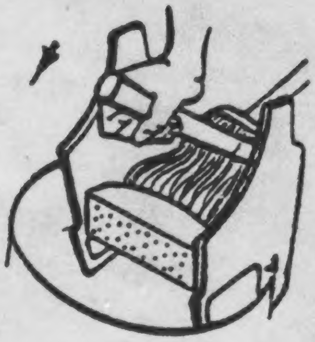


JOB STEPS

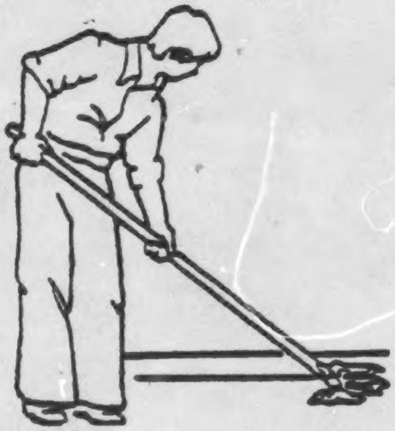
7. Apply lots of sealer to the work area. Do not work on an area larger than 25 square feet at one time. Ask your instructor if you do not know how to measure 25 square feet.



8. After you have applied sealer to the area, return to your bucket and wring out your mop as dry as possible.

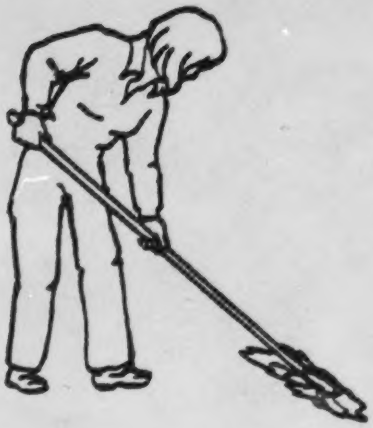


9. Using your mop, pick up the sealer that remains on the floor.



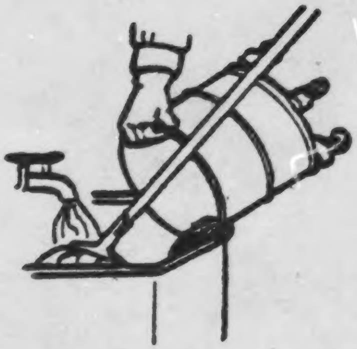
JOB STEPS

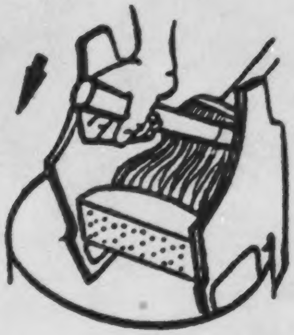
10. Repeat steps 6 through 9 until you have covered an entire floor.

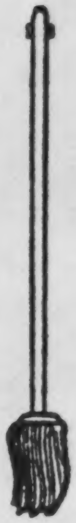


11. Return equipment to the storage area.

12. Rinse out your mop and bucket in warm water. After rinsing your mop, squeeze it dry and hang it up.







building maintenance & engineering

unit: Floor Care

capital area career center

module: 2201 01 011 **date:** 12-07-76 **level:** 1

skill title: Operation and Use of Wet Vacuum

developed & written by: Lester Schick

visuals by: Bill Draper

SOLUTION - A mixture of chemicals in a liquid such as water or amonia.

WAND - A long handle attached to a sweeper hose.

SQUEEGEE - A rubber blade used to pull water across a flat surface.

PERFORMANCE OBJECTIVE

You are going to learn:

To remove solutions from floors using a wet vacuum.

And in order to do this you will need:

wet vacuum

wand

floor tool attachment

vacuum hose

bucket

wringer

mop

We will know you can do it when:

You have wet vacuumed a floor so that no solution is left.

INFORMATION	MATERIALS	LOCATION OF MATERIALS
Why do you wet vacuum a floor?		
Because in cleaning floors you will often use liquids such as water or cleaning solutions to remove all the dirt. In order to remove these liquids from the floor, a wet vacuum is used.		
A wet vacuum removes liquids from floors more quickly than other methods.		
Be sure that you have an EQUIPMENT CHECKLIST for the Floor Care Unit.	1. Equipment Checklist	

1-11 What is a wet vacuum? 4

A wet vacuum is ______________________.

a. A very fast car.

b. A tool used for spraying water.

c. A machine used in painting a floor.

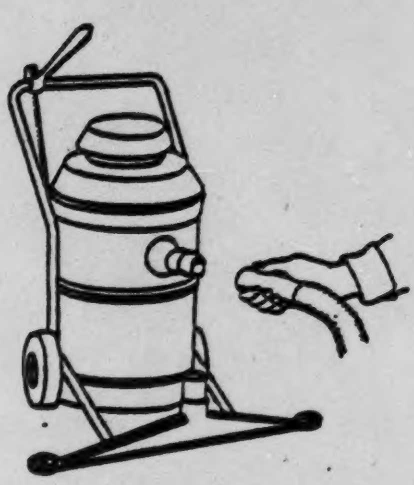
d. A machine used to collect liquid from a floor.

Hope you picked "d".

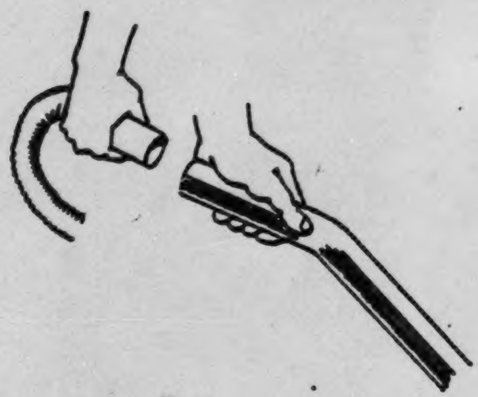
JOB STEPS

1. Move all the equipment to the work area. Use the equipment checklist to be sure you have everything you need.

2. Attach the vacuum hose to the wet vacuum tank.



3. Attach the other end of the hose to the handle of the wand.

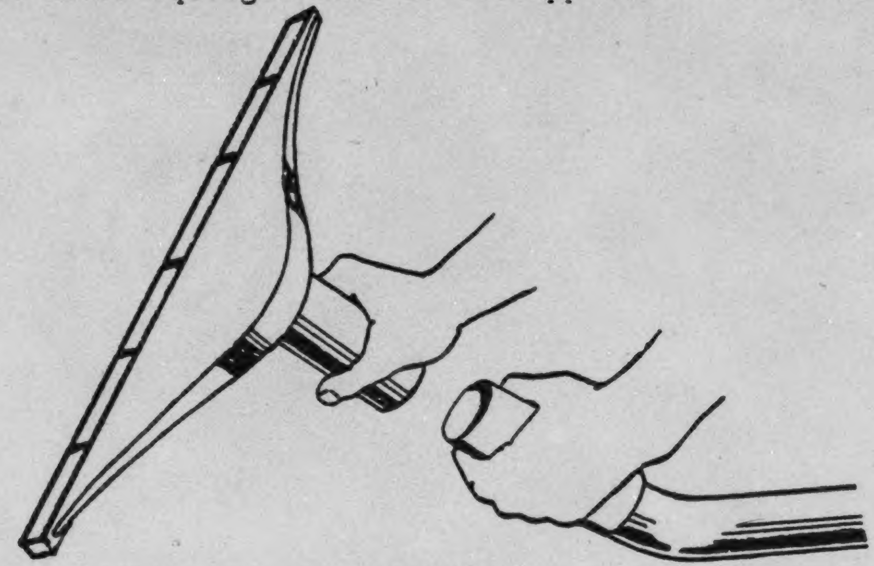


WORD GUIDE

SQUEEGEE - A rubber blade used to pull water across a flat surface.

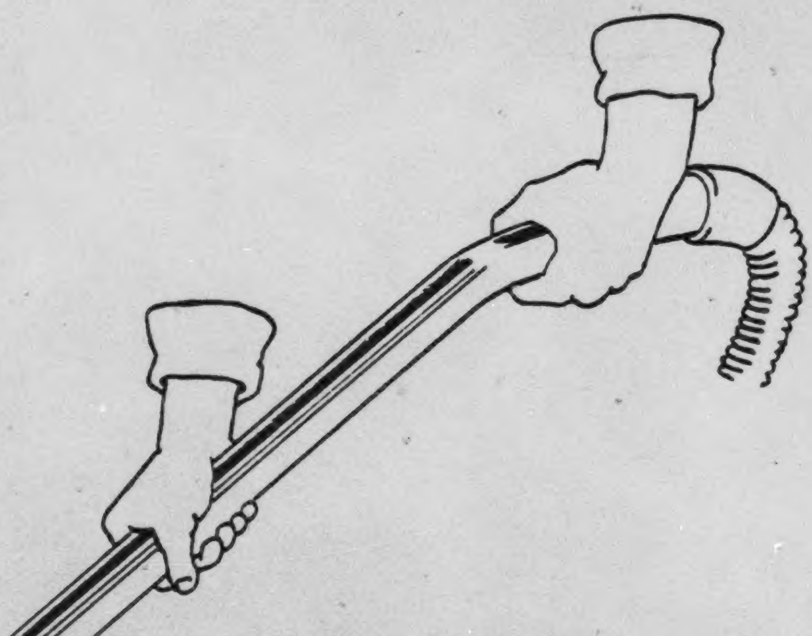
JOB STEPS

4. Attach the floor squeegee tool to the opposite end of the wand.

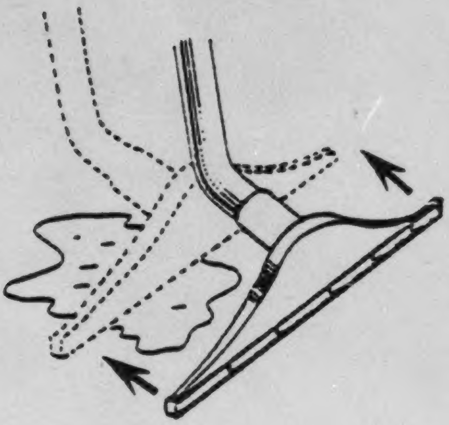


5. Begin at the far end of the work area.

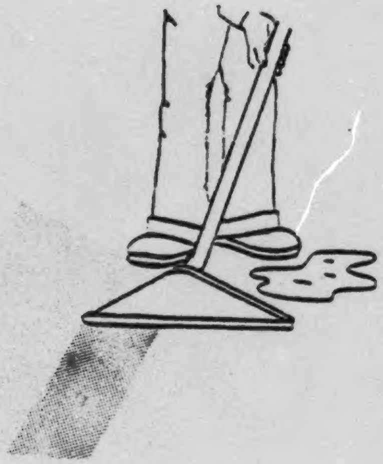
6. Place one hand just above the curve at the top of the wand, and the other hand about 12 inches to 18 inches lower.



7. Place the floor tool slightly beyond the solution on the floor and pull towards you.



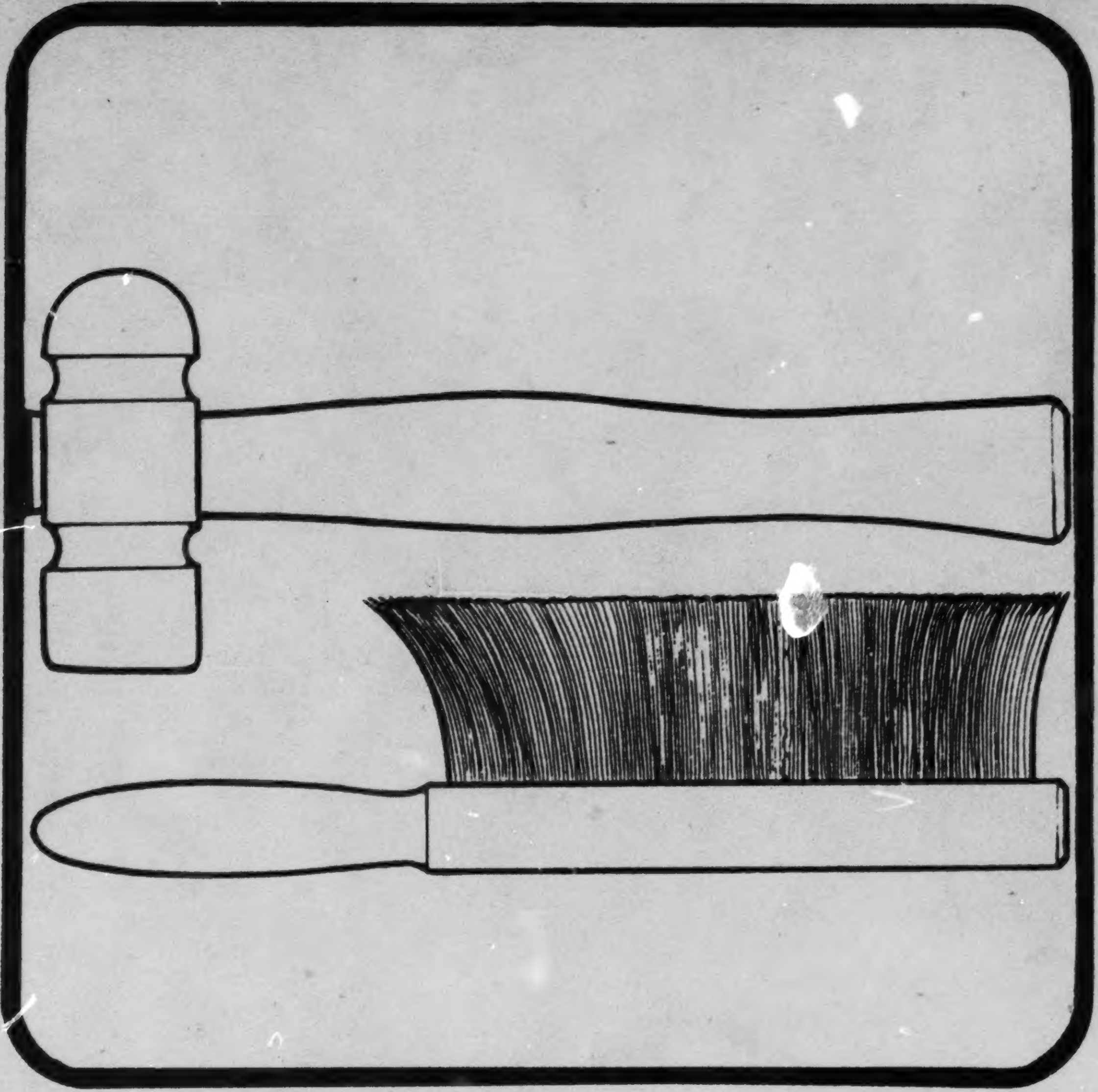
8. Slightly overlap each stroke.



9. When you have wet vacuumed the entire area, damp mop the floor to remove streaks. (See module on damp mopping - 2201 01 002).

10. Return all materials and tools. Be sure all tools are clean.

11. The same procedures are used on wet vacuuming a carpet.



building maintenance & engineering

unit: FLOOR CARE

capital area career center

module: 2201 01 012 date: December 1976 level:

skill title: Use of an Automatic Floor Machine

developed & written by: Lester Schick

visuals by: Sandra Starnaman

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

How to strip or light scrub a floor with an automatic floor machine.

AND IN ORDER TO DO THIS YOU WILL NEED:

automatic floor machine

2 buckets and wringers

2 mops

steel wool kick pad

stripping pads

wax remover

light scrub soap

WE WILL KNOW YOU CAN DO IT WHEN:

You have removed all old wax and black marks from a floor.

INFORMATION

Why do you use an automatic floor machine?

Because old wax slowly becomes dull, dirty, and covered with black marks from shoes. Dusting and mopping will not clean this old wax. A new coat of wax will just make the floor harder to clean. An automatic floor machine makes the job of removing the old wax easier and quicker than using a floor buffer. By stripping off the old wax, you can prepare a floor for a new coat of wax.

NOW DO:

To learn about floor stripping, watch and listen to the slide tape for Module 2201 01 005. In Module 2201 01 005, you learned how to use a floor buffer to strip floors. Sometimes you might use an AUTOMATIC FLOOR MACHINE to strip a floor.

Be sure that you have an EQUIPMENT CHECKLIST for the Floor Care Unit.

When you have finished the slide tape, continue the Module by turning to the next page.

What is an automatic floor machine?

4

An automatic floor machine is ________________.

a. a machine which automatically builds new floors.
b. a machine which scrubs dishes.
c. used to strip and clean floors.
d. used to clean bathtubs.

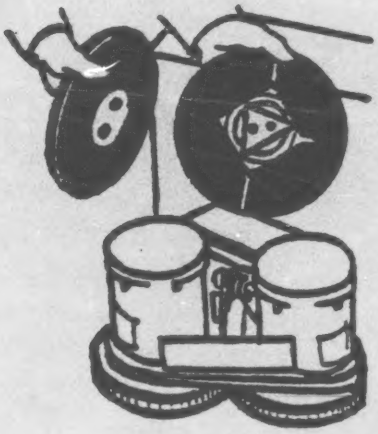
Hope you picked "c".

JOB STEPS

---

1. Fill the solution tank 2/3 full with warm water and add the correct amount of wax remover according to directions on the container. Your instructor will help you with this.

2. Place the stripping pads on the brushes and attach them to the machine. If you need help, your instructor can show you how to do this.



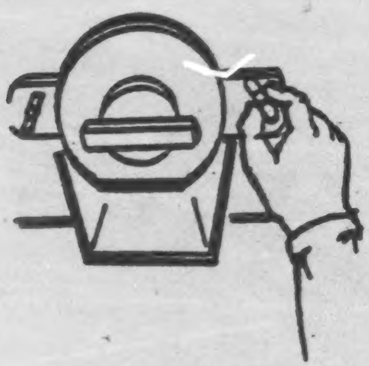
WORD GUIDE

SQUEEGEE - a rubber blade used to pull water across a flat surface.

5

JOB STEPS

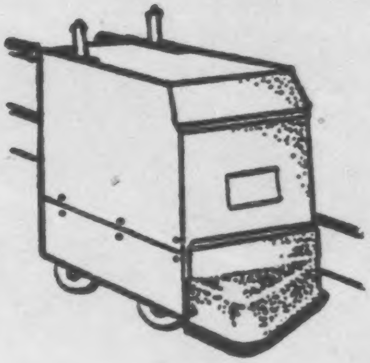
3. Make sure the pick-up tank is empty, the squeegee blade is clean, and all hose connections are tight.



4. Fill two buckets half full with cold water. Add wringers to the bucket.

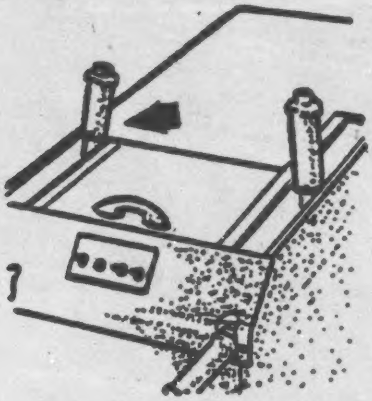
5. Move your equipment to the job area. Use your checklist to be sure you have all the equipment you will need.

6. An automatic floor machine is used mostly for open areas. Start at the outside of the area to be done and work around the area toward the center.

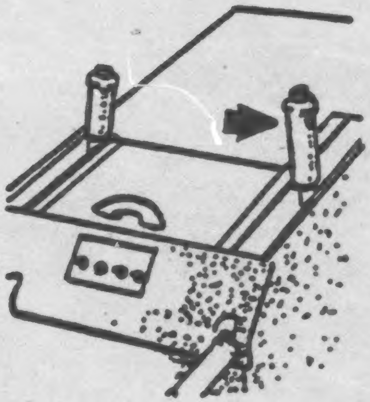


JOB STEPS

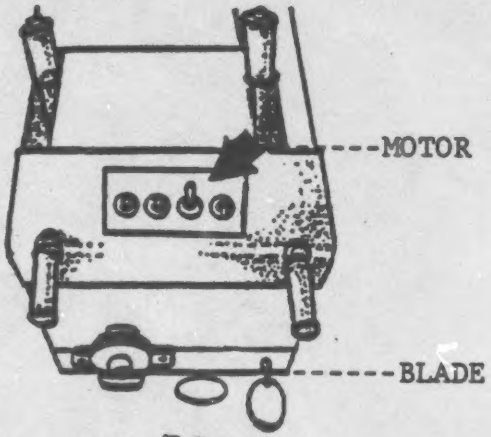
7. Set the solution control lever to the desired amount so that a thin layer of solution is on the floor.



8. Set brush pressure to the desired amount. Usually about normal pressure.



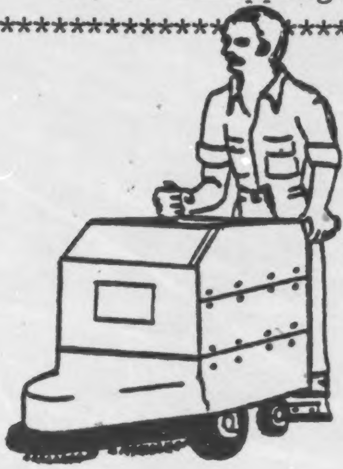
9. Lower the squeegee blade and turn the vacuum motor on.



JOB STEPS

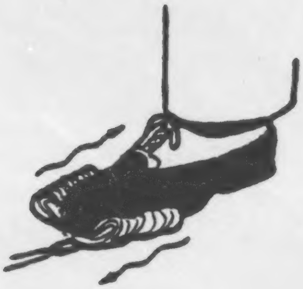
10. Lower the brush and turn on the machine. Begin moving the machine at the same time as you turn on the machine.

CAUTION: Never leave the machine in the same place with the brushes running. This causes floor wear and uneven stripping.



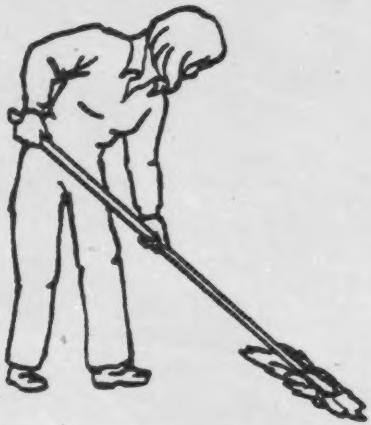
11. Run the automatic floor machine over the entire area to be done. Be sure to go over each place one time.

12. Use the steel wool kick pad to strip the edges and corners.

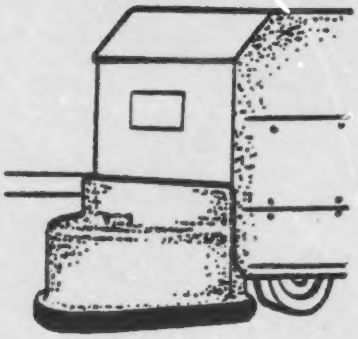


JOB STEPS

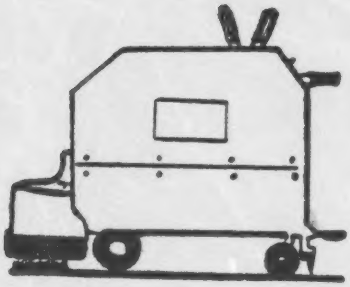
13. Mop the entire area to pick up water. (See module on damp mopping a floor 2201 01 002).



14. If the floor is extra dirty, you may run the automatic floor machine without the squeegee and vacuum the first time over the floor.



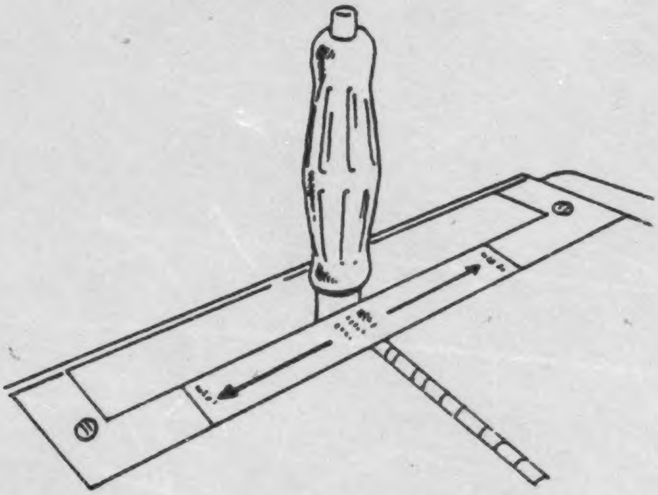
Then go over the floor a second time with the squeegee and vacuum. Do not add extra water to the floor.



JOB STEPS

15. Light Scrubbing. The methods are the same as in stripping except:

    a. Use a light scrub pad.
    b. Use cold water with a light scrub soap.
    c. Use less brush pressure.



    d. Go over the floor only once with the automatic floor machine.

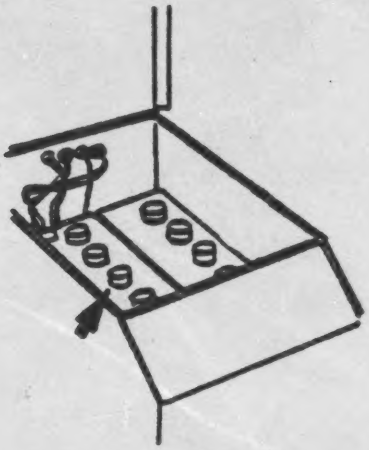
16. Return all materials and tools. Be sure all the tools are clean.

WORD GUIDE

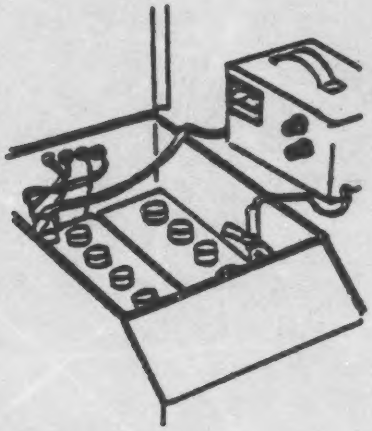
LUBRICATE - add oil or grease

17. Care of an automatic floor machine.

    a. Empty solution and pick-up tank and hose after each use.
    b. Fill the batteries to the proper level. Ask your instructor to help you.



    c. Lubricate when required, according to the operating manual.
    d. Do not leave the squeegee down when the automatic floor machine is not in use.
    e. Clean the battery cables. See instructor.
    f. Remove and clean vacuum motor filter.



    g. Plug in the battery charger after each days use.

building maintenance & engineering

unit: Floor Care

capital area career center

module: 2201 01 013 **date:** 12/7/76 **level:**

skill title: Floor Machine (Buff Floor)

developed & written by: Lester Schick

visuals by: Marie Gougeon

WORD GUIDE 2

BUFF - To polish or shine.

PERFORMANCE OBJECTIVE

You are going to learn:

How to operate a floor machine and buff floors.

And in order to do this you will need:

Floor Machine

Appropriate brush and white buffing pad

We will know you can do it when:

You have buffed a floor so that it has an even shine.

INFORMATION	MATERIALS	LOCATION OF MATERIALS
Why do you buff a floor?		
The wax shine on a floor will slowly become dull from people walking across the floor. The wax shine can be brought back by buffing. It is easier to buff a floor than it is to strip off the old wax and apply new wax.		
NOW DO:		
You will be told how to buff a floor.		
Be sure that you have an EQUIPMENT CHECKLIST for the Floor Care Unit.	1) Equipment Checklist	
Continue with this module by turning to the next page.		

What is floor buffing?

A person who buffs a floor______________.

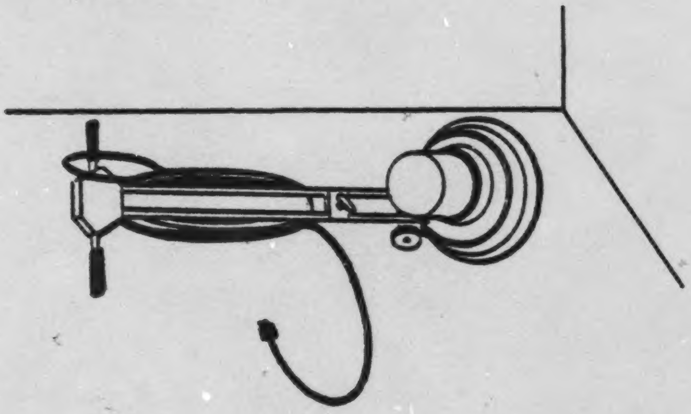
a) strips wax from the floor.
b) shines up the dull wax already on the floor.
c) tries to hide under the floor.
d) walks across the floor.

Hope you chose "b".

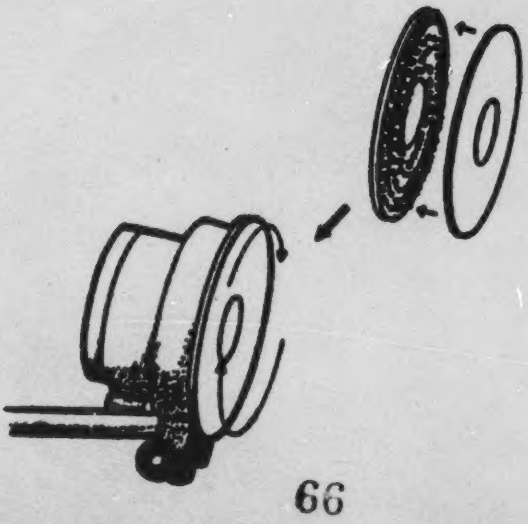
JOB STEPS

1. Take your equipment to the work area. Use your checklist.

2. Place both hands on the handle and tilt the machine so that the handle rests on the floor.



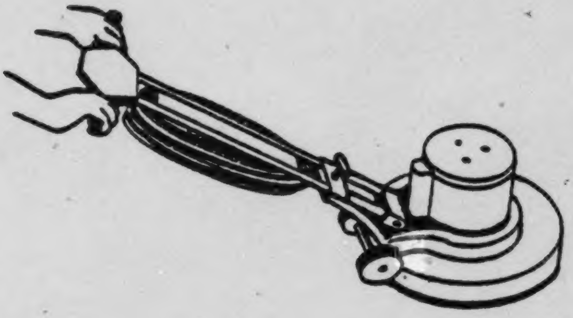
3. Attach the buffing pad to the brush.

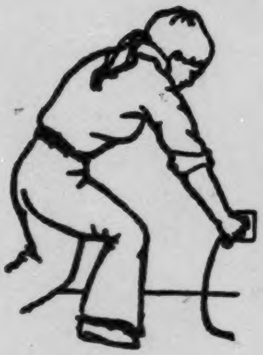


4. Attach the brush to the floor machine by placing the brush plate on the drum. The slots in the brush plate will match the slots on the drum of the machine. Turn the brush until it is tight. Your instructor will assist you on this.

5. Place the machine in the upright position.

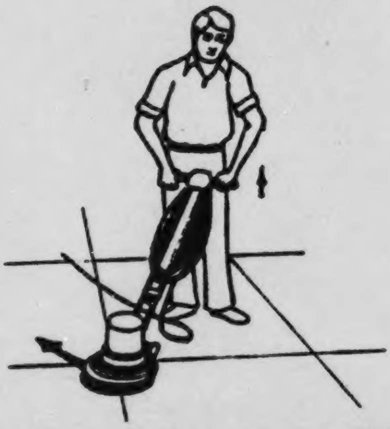
6. Adjust the handle to about waist level and lock the handle in place. Plug the machine in.

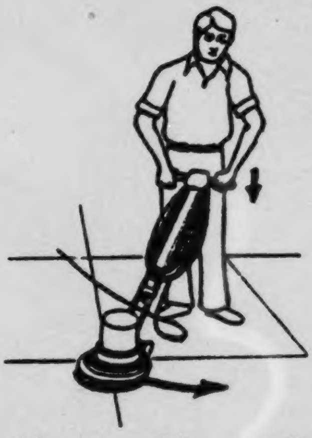




7. Place both hands on the machine handle and hold it tightly.

8. By slightly lifting on the handle, the machine will move to your right. Slightly pushing down on the handle will move the machine to the left.



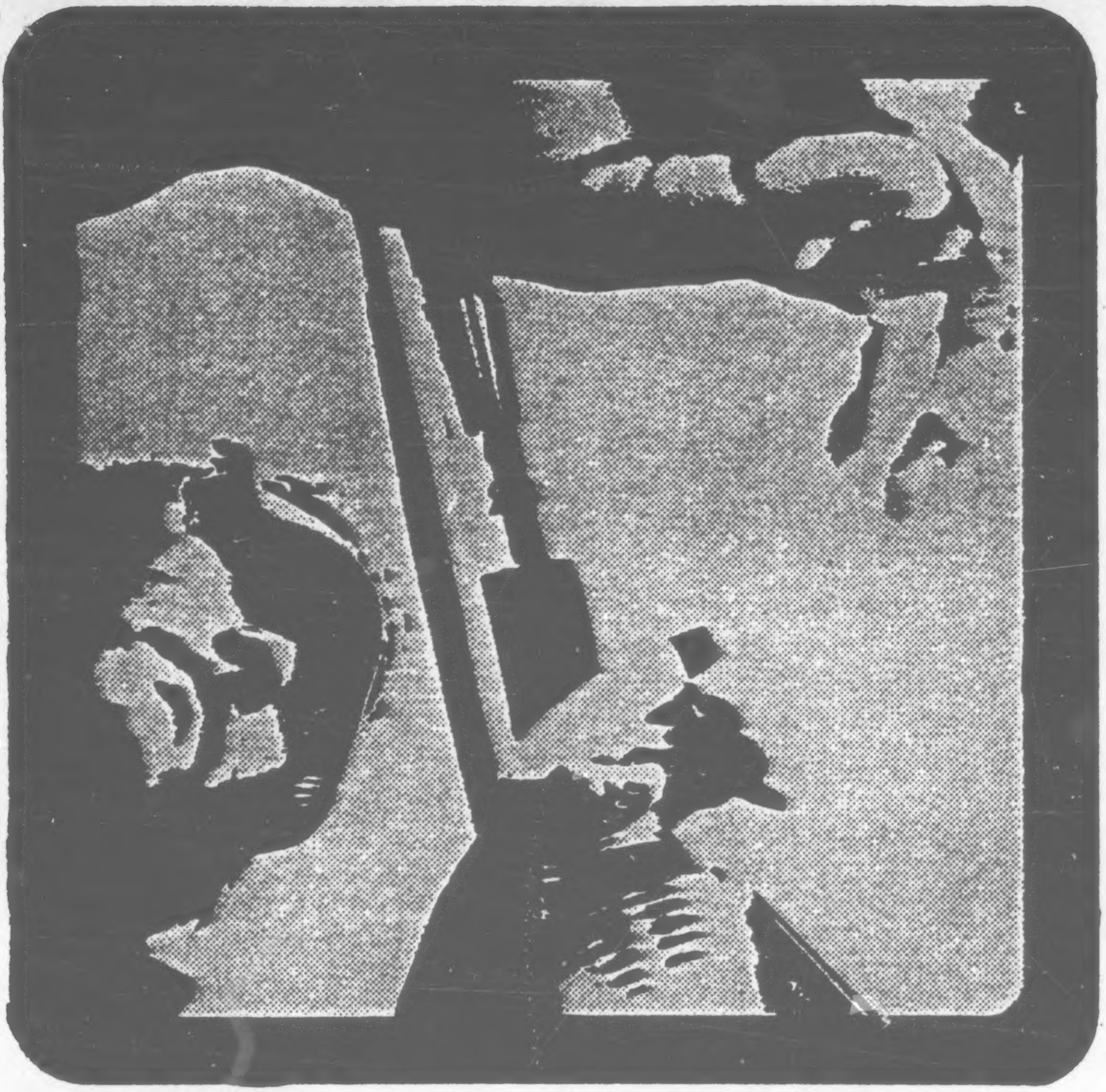


9. Practice moving the machine from side to side until you can do it with ease.

JOB STEPS

10. Continue this until the floor has been buffed. Do not miss any places.

11. Return all materials and tools. Be sure all tools are cleaned.



building maintenance & engineering

unit: Floor Care

capital area career center

module: 2201 01 014 date: 12/12/76 level:

skill title: Sweeping and Mopping Stairs

developed & written by: Lester Schick

visuals by: Jack Bergeron

WORD GUIDE

LITTER - trash, waste paper.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

How to sweep and mop stairs.

AND IN ORDER TO DO THIS YOU WILL NEED:

push broom
mop
bucket and wringer
dustpan
bench brush
wiping cloth

WE WILL KNOW YOU CAN DO IT WHEN:

You have mopped stairways so that no dirt or litter are on them.

INFORMATION	MATERIALS	LOCATION OF MATERIALS
Why do you sweep and mop stairs?		
People using stairways cause a buildup of dirt and litter. By sweeping and mopping stairs this dirt and litter is removed and the stairway is kept clean.		
Litter on stairs can be dangerous. People could slip on broken pencils, scrap paper, or other types of litter.		
Be sure that you have an Equipment Checklist for the Floor Care Unit.	Equipment Checklist	
Continue this module by turning to the next page.		

4

Why is litter dangerous on stairs?

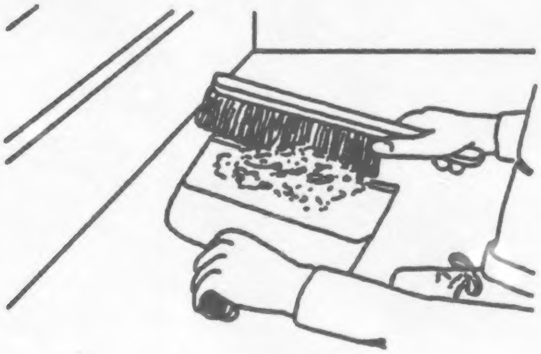
Litter on stairs can cause people to ______________.

a. get sick.
b. trip and fall.
c. save money.
d. fly.

Hope you choose "b".

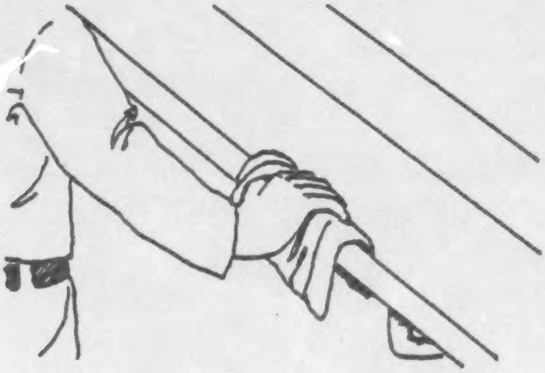
JOB STEPS

1. Pick up the equipment you will need. Use your checklist to be sure that you have everything.
2. Bring equipment to the work area.
3. Start at the top of the stairs with the push broom. Sweep towards the bottom of the stairs.
4. Be sure to sweep the corners of each step.
5. When you reach the bottom, use the bench brush to sweep the dirt into the dustpan.



JOB STEPS

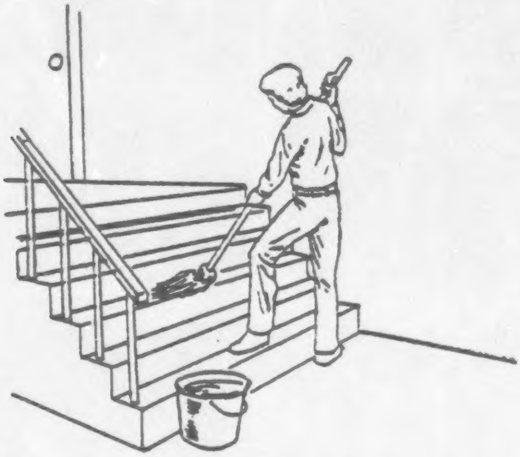
6. Return to the top of the stairs. Dust all railings and ledges with a wiping cloth.



7. Fill a bucket 2/3 full with cold water.

8. Dip a clean mop into the water and wring out the mop.

9. Walk to the top of the stairs. Move backwards down the stairs. Mop each step in front of you.



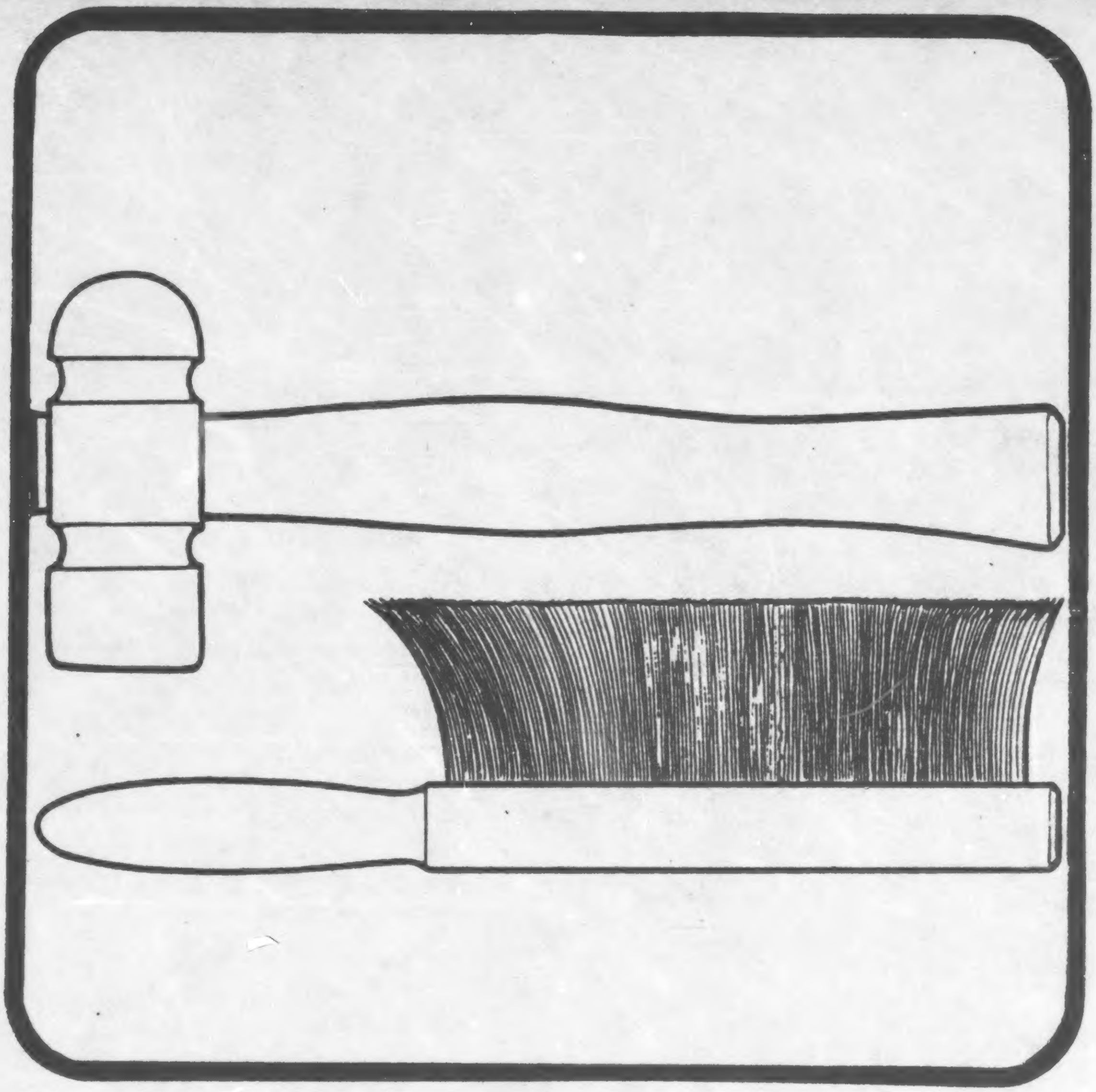
10. Use a side to side motion on each step.

11. Leave the bucket of water at the bottom of each flight of stairs you are mopping.

```
*************************
* CAUTION:  Be sure the *
* bucket is out of your *
* way.                  *
*************************
```

JOB STEPS

12. REMEMBER: Try not to walk on the stairs until they are dry.
13. Return all equipment. Be sure all equipment is clean.



building maintenance & engineering

unit: FLOOR CARE

capital area career center

module: 2201 01 015 date: December 1976 level: I

skill title: Review and Practice

developed & written by: Lester Schick

visuals by: Sherri Baker

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

To clean, seal, wax and buff a resilient floor.

AND IN ORDER TO DO THIS YOU WILL NEED:

- 3 mops
- 3 pails
- 2 wringers
- Stripping solution
- Sealer
- Wax
- Wet vacuum
- Floor machine
- Wire brush
- Scrubbing pad
- Buffer pad

WE WILL KNOW YOU CAN DO IT WHEN:

The floor is free of all dirt and has a high shine.

INFORMATION	MATERIALS	LOCATION OF MATERIALS
Why do you clean, seal, wax and buff a resilient floor?		
A tile floor becomes dirty, dull, and covered with black marks. In order to get the floor clean and put a new coat of wax down, you have to: 1) strip off old wax. 2) seal the floor. 3) wax the floor. 4) buff the floor.		
These steps result in a clean, high polished floor.		
To refresh your memory, refer back to the following modules: 1) 2201 01 005 - Stripping A Resilient Floor. 2) 2201 01 008 - Sealing A Floor 3) 2201 01 006 - Waxing Floors		
After you have reviewed the modules, watch the slide tape for module 2201 01 005	Slide Tape 2201 01 005	
Then get an Equipment Checklist for the Floor Care Unit.	Equipment Checklist	

What is a resilient floor?

A resilient floor is a floor made of ________________.

a. bricks
b. old wax, dirt and black marks
c. banana peels
d. "soft" tiles, such as asphalt, vinyl, or vinyl asbestos

Hope you picked "d".

What are the 4 steps to follow to put a high shine on resilient floors?

The four steps are ____________________.

a. strip, seal, wax and buff
b. strip, buff, mop and run
c. clean, seal, wax and strip
d. buff, ruff, tuff and snuff

Hope you picked "a".

JOB STEPS

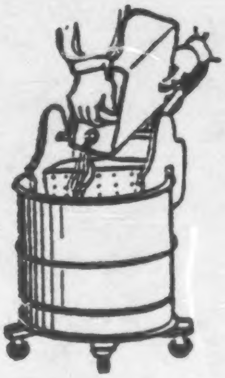
1. Pick up the equipment you will need. Use your checklist to be sure that you have everything you will need.

2. Remove all furniture and objects from the room. If carpets cannot be removed, turn back the edges.

3. Dust mop the entire room until no dirt can be seen.

4. Pick up dirt with a bench brush and dust pan. Put dirt into trash container.

5. Add stripping solution to warm water in one bucket. Ask your instructor how much to add (usually one part solution for six parts water).



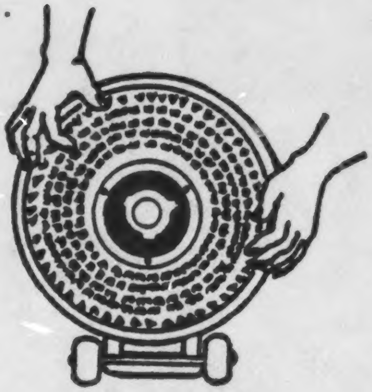
6. Apply mixed solution to the floor. Begin with an area about 10 feet by 10 feet. Use a very wet mop. Be sure you cover the entire area.

JOB STEPS

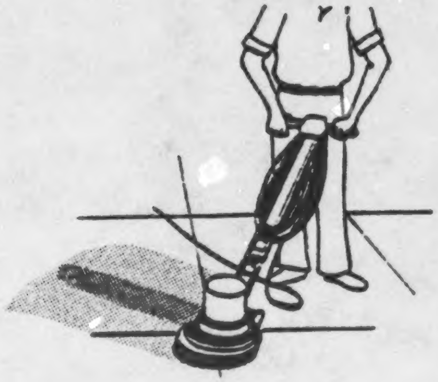
7. Let the solution stay on the floor for 5 minutes.

8. Put the gray scrub pad on the wire brush.

9. Put the wire brush on the floor machine.



10. Run the floor machine back and forth. Overlap each stroke.



11. Go over the 10 foot by 10 foot area with the floor machine.

12. Use the wet vacuum to pick up the solution from the floor. Never let the solution dry on the floor.

13. Repeat steps 6 through 12 on another 10 foot by 10 foot area. Do this until the entire area is done.

WORD GUIDE

SOAK - To wet completely.

JOB STEPS

14. Rinse the entire area. Use a mop and clean water.

15. Use the wet vacuum to pick up the water from the floor.

16. Damp mop the entire area. Use a clean mop and clean water.

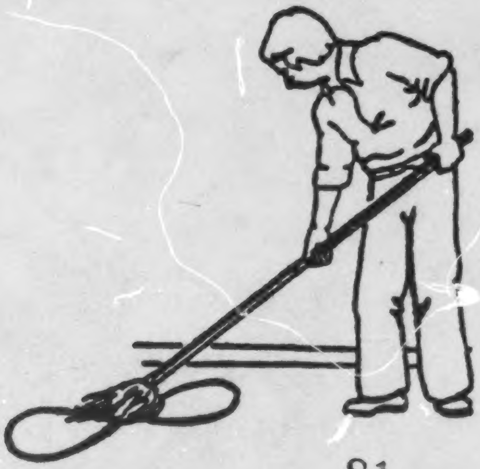
17. Let the floor dry.

18. Rub your fingers across part of the dry floor. If there is white dust on your fingers, damp mop again with clean water.

19. Let the floor dry completely. While the floor is drying, put the proper amount of sealer in a clean bucket. Ask your instructor how much sealer to add. Add a wringer on the bucket.

20. Dip a clean mop into the sealer. Soak the mop. Squeeze the mop until it only drips a little. Do not squeeze the mop dry.

21. Swing the mop over an 8 foot by 10 foot area in a figure 8 motion. Soak the mop often to be sure an even coat of sealer is on the floor.



WORD GUIDE

EXCESS - Too much.

JOB STEPS

22. Before the sealer dries, squeeze out your mop in the wringer. Then mop the floor to pick up excess sealer.

23. Allow the sealer to dry overnight, if possible.

24. Damp mop the area the next day to pick up any dust on the floor.

25. Pour about 4 inches of wax in a clean bucket.

26. Dip a clean mop into the wax. Wring out the mop until it does not drip.

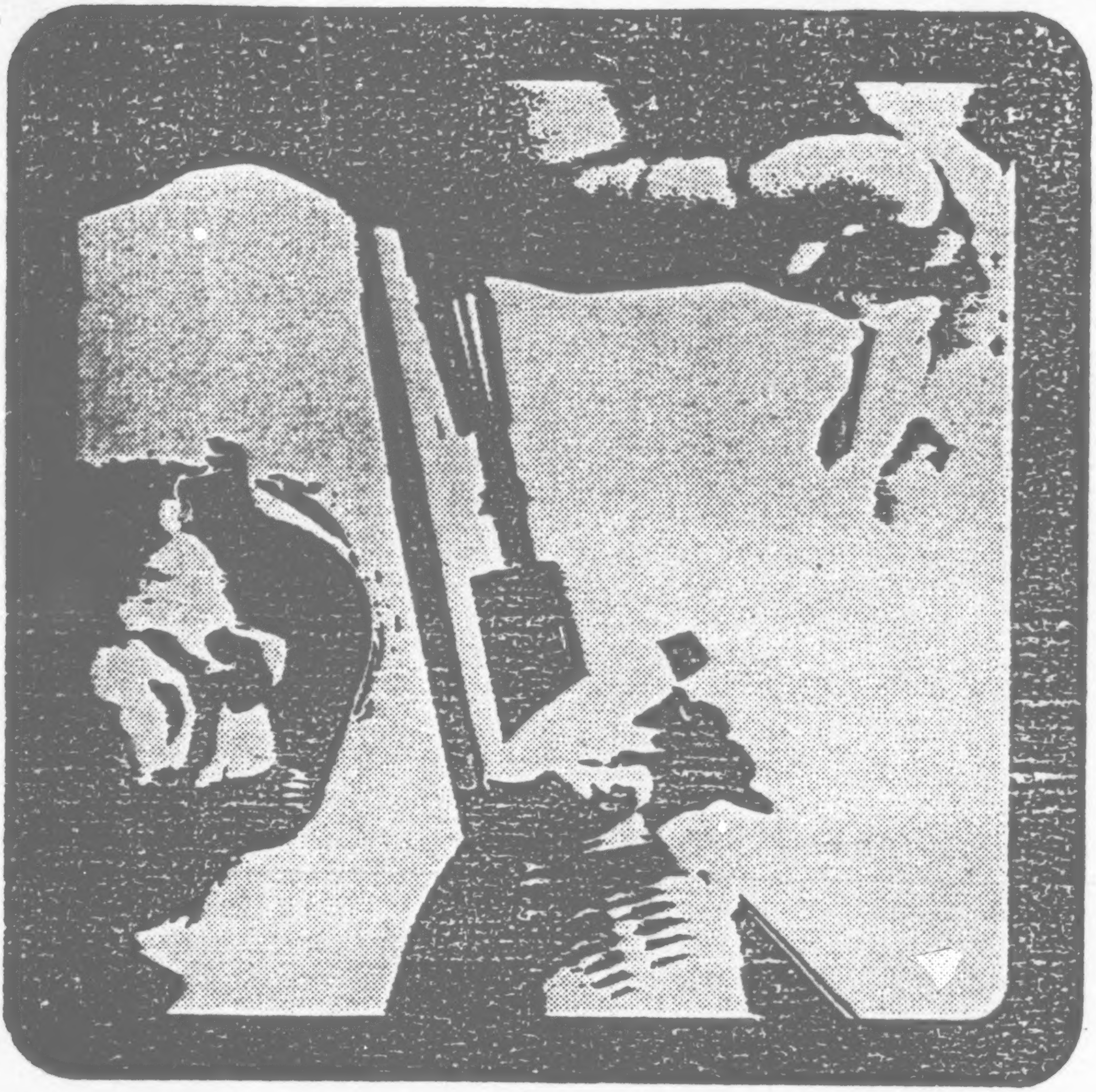
27. Apply the wax to an 8 foot by 10 foot area. Move the mop in a figure 8 motion.

28. The wax will dry in 30 minutes. Then apply a second coat of wax.

29. While the second coat of wax is drying, attach the buffer pad to the wire brush. Attach them both to the floor buffer.

30. Buff the entire floor.

31. Return all equipment and materials. Be sure all equipment is clean.



building maintenance & engineering

unit: Floor Care

capital area career center

module: 2201 01 16 date: 12-12-76 level: 1

skill title: Care of Hard Surface Floors

developed & written by: Lester Schick

visuals by: Sandra Starnaman

PERFORMANCE OBJECTIVE

You are going to learn:

How to give hard surfaced floors daily care needed for one week.

And in order to do this you will need:

Dust mop
Broom
Bench brush
Dust pan
Mop
2 Mop pails
1 Mop wringer
Floor machine
Wax spray bottle

We will know you can do it when:

You keep a floor polished and free of dirt and litter for one week.

INFORMATION	MATERIALS	LOCATION OF MATERIALS
Why do you clean and polish a hard floor?		
Because floors get dirty with use. The polish on the floor becomes dull when people walk across the floor. By dust mopping daily, and buffing when the floor becomes dull, the floor will remain neat.		
Review modules: 1. Dust Mopping (2201 01 001) 2. Damp Mopping (2201 01 002) 3. Spray Buffing (2201 01 007) 4. Floor Machine (2201 01 013)		
Be sure you have an Equipment Checklist for the Floor Care Unit.	Equipment Checklist	

1-16
What must be done to care for a hard surfaced floor?

Hard surfaced floors should be ______________.

a. cleaned and polished
b. cleaned and stripped
c. polished and scratched
d. rubbed with butter

Hope you picked "a".

JOB STEPS

1. Pick up the equipment you will need. Use your checklist.

2. Dust mop the floor.

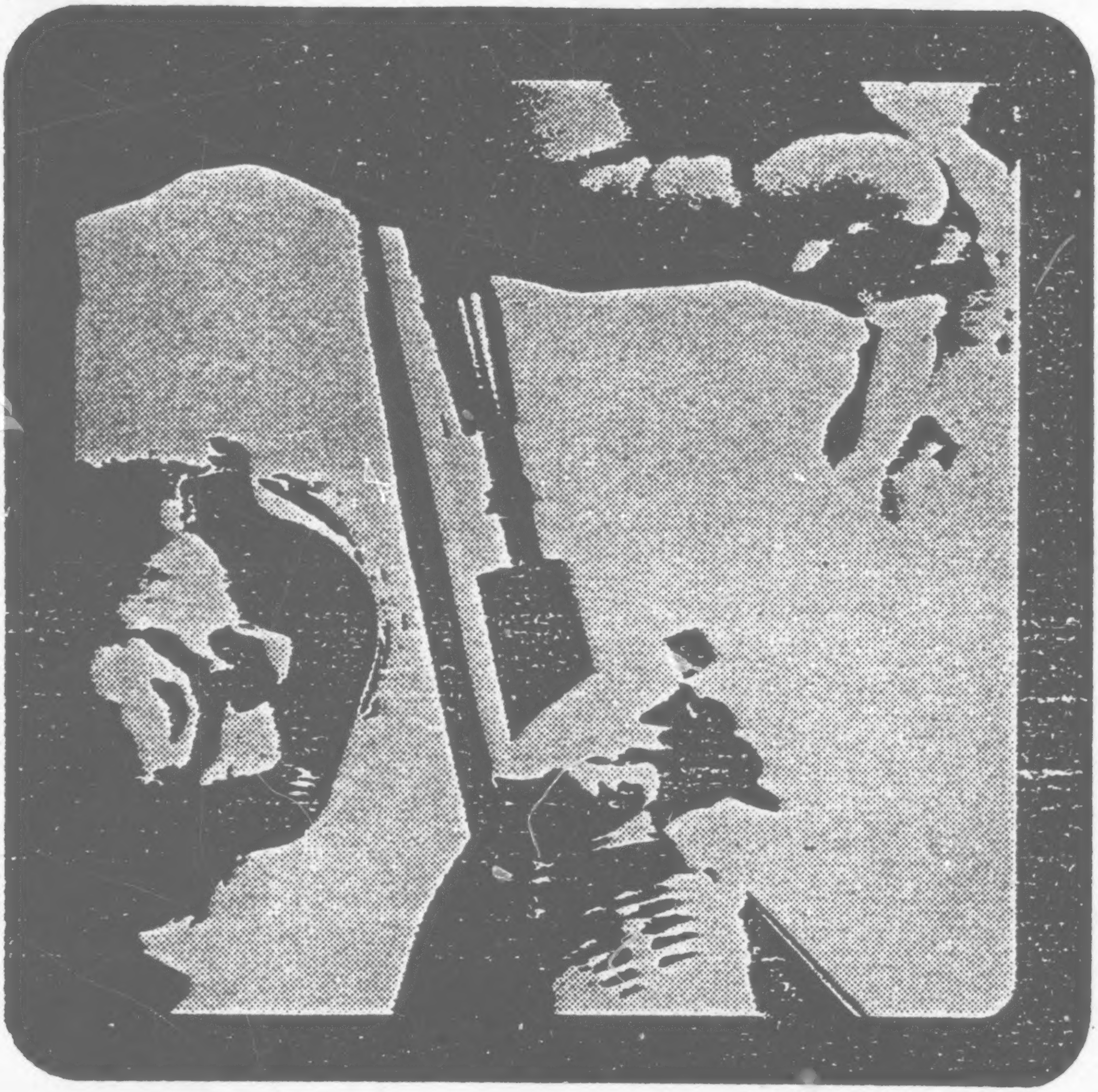
3. Pick up dirt with the dust pan and bench brush.

4. Damp mop the floor with clean water and mop.

5. Let the floor dry.

6. Spray a mist of wax on dull spots. Then buff. Use either the automatic floor machine or the floor buffer. Review module 2201 01 012, Use of the Automatic Floor Machine.

7. Return all your equipment to the storage area. Be sure all equipment is clean.



building maintenance & engineering

unit: Floor Care

capital area career center

module: 2201 01 17 date: 12-12-76 level:

skill title: How to Treat a Dust Mop

developed & written by: Lester Schick

visuals by: Sandra Gostomski

WORD GUIDE

STRANDS - the thick strings that hang loose on the mop.

TREAT - putting oil on the mop head.

PERFORMANCE OBJECTIVE

You are going to learn:

How to treat a dust mop.

And in order to do this you will need:

- a new mop head
- mop oil
- hand sprayer
- ruler
- pad
- pencil

We will know you can do it when:

You have treated a mop head evenly, hung it up in the right way, and have not used it for 12 hours after treating.

INFORMATION	MATERIALS	LOCATION OF MATERIALS
Why do you treat a dust mop? Regular treatment of the mop helps keep the mop from wearing out. It also will help the mop collect dust off the floor.		
Be sure you have an EQUIPMENT CHECKLIST for the floor care unit.	Equipment Checklist	

Why do you treat a mop?

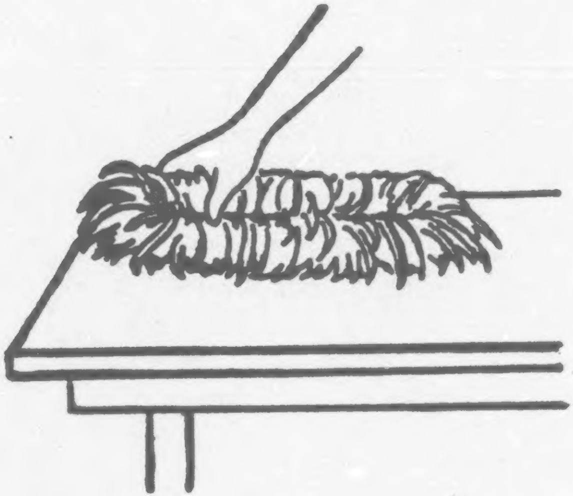
A mop is treated so that it ____________.

a. lasts longer.
b. feels soft.
c. mops automatically.
d. sounds better.

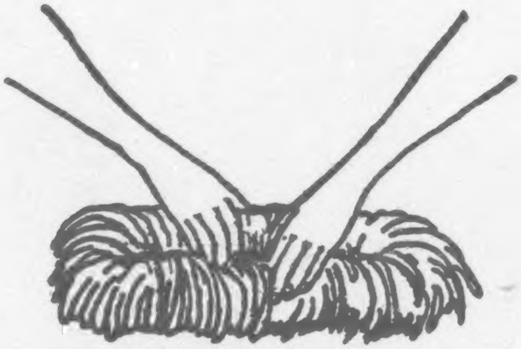
Hope you chose "a".

JOB STEPS

1. Pick up the equipment you will need. Use your checklist.
2. Place the mop head on the bench so that the bottom is facing up.



3. Spread the strands out evenly around the center of the mop.



4. Measure the width of the mop.

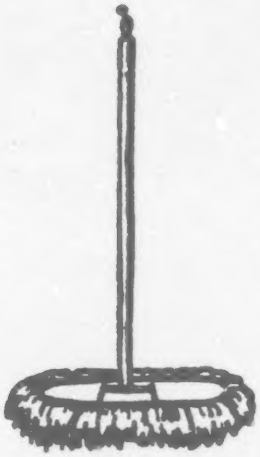
5. Divide the number of inches by 6, if you treat mops once a week. (If you treat mops every day, divide by 12.)

6. The number that you have figured is the number of ounces of mop oil you will need to use.

7. Add the correct number of ounces of mop oil to the hand sprayer.

8. Spray the oil evenly on the mop head.

9. Hang the mop by the handle. The strands must hang toward the floor.



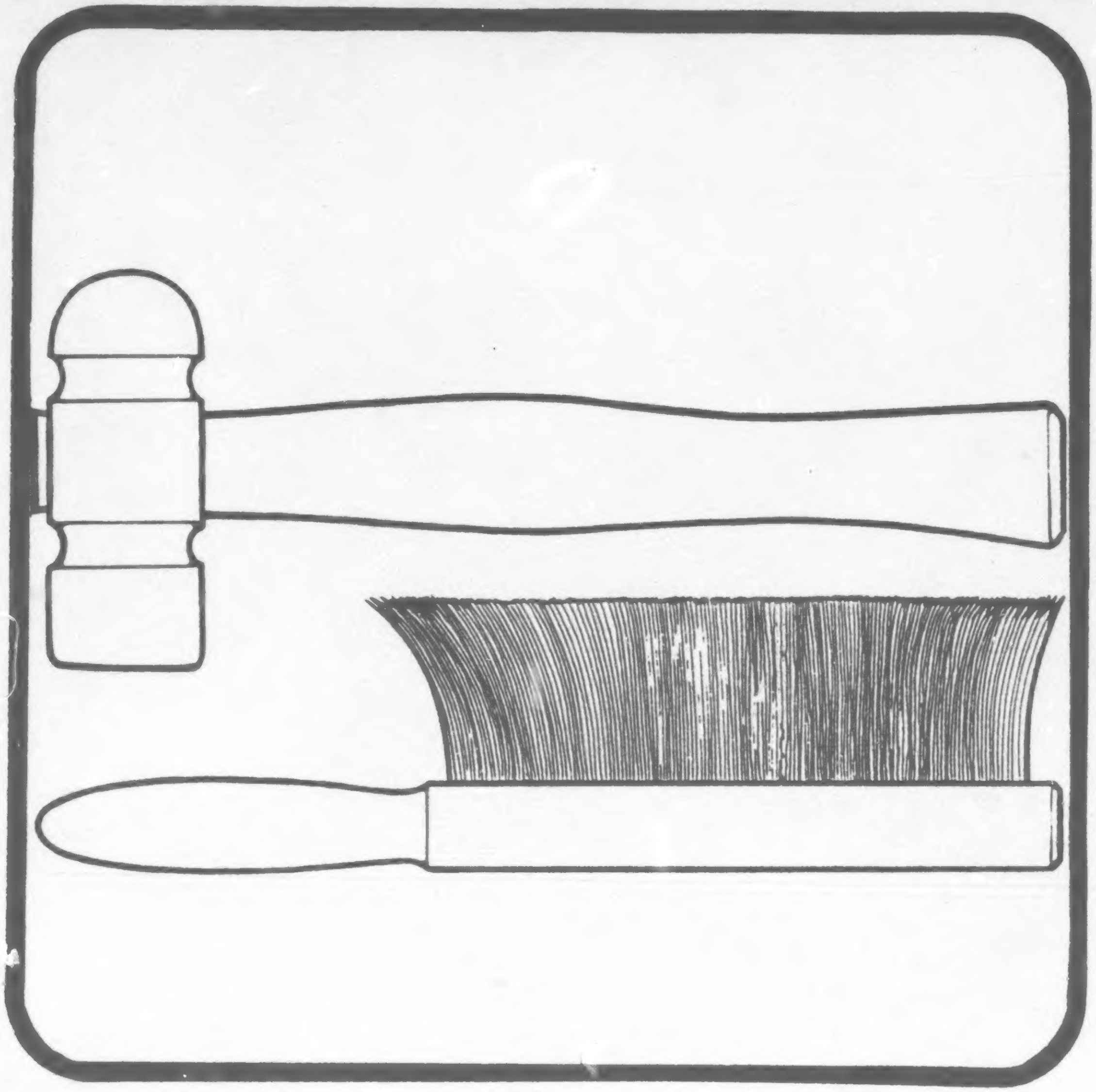
10. Leave the mop hanging for 12 hours.

11. Treat all new or cleaned mop heads following steps 1-8. Some mops are pre-treated at the cleaners. Pre-treated mops do not have to be treated by you.

JOB STEPS

10. Leave the mop hanging for 12 hours.

11. Treat all new or cleaned mop heads following steps 1-8. Some mops are pre-treated at the cleaners. Pre-treated mops do not have to be treated by you.



building maintenance & engineering

unit: GENERAL MAINTENANCE

capital area career center

module: 2201 02 001 **date:** December 1976 **level:** I

skill title: Fluorescent Lamp Replacement

developed & written by: Buster Crabb

visuals by: Sandra Starnaman

93

WORD GUIDE

FAULTY LAMPS - Blinking or dim lamps, or lamps with brown ends.

PERFORMANCE OBJECTIVE

You are going to learn:

How to remove and replace fluorescent lamps that are either faulty or burned out.

And in order to do this you will need:

- New Fluorescent Lamps (correct size)
- Step Ladder/Scaffold (correct height)
- Fluorescent Lamp Carton
- Pencil and Paper
- Safety/Caution Signs ("Overhead Worker")
- Drop Cloth (if used)
- Helper (if possible)

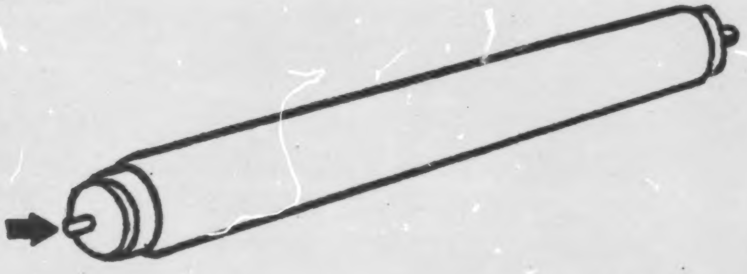
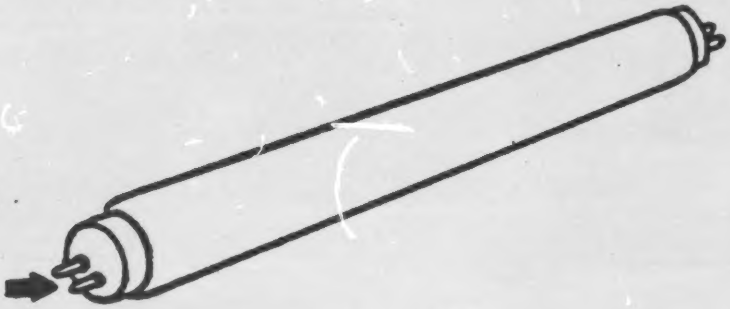
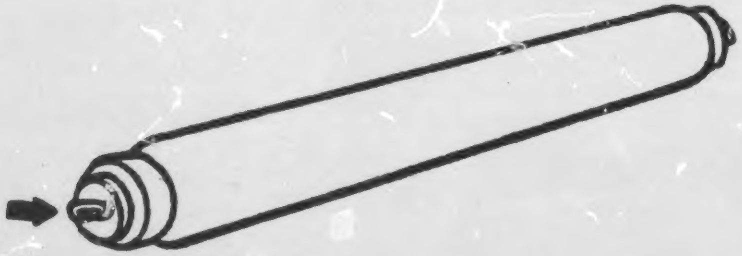
We will know you can do it when:

You have watched the slide tape and then have replaced a fluorescent lamp.

WORD GUIDE

LOUVERED - Cross-lined or screened

INFORMATION	MATERIALS	LOCATION OF MATERIALS
The reasons for the replacing of fluorescent lamps:		
1. Faulty lamps: ends of lamps turn a brown color; a flickering of the lamp, which causes an uneven light and can cause damage to starter or electrical parts.		
2. Burned out lamps: no light is given out.		
3. Dim lamps: cause eyestrain, tiredness, and headaches.		
The different types of fluorescent fixture shields:		
1. glass		
2. plastic - louvered		
NOW DO:		
1. Read pages 202-204-205-206-207. It will explain different methods and special equipment used to replace fluorescent lamps.	Sacks Bldg. & Plant Maintenance	Library
2. Watch the slide tape	Cleaning and Replacement of Fluorescent Lamps	Library
3. Be sure you have an equipment checklist.	Equipment Checklist	Maintenance Shop
When you have watched the slide tape and your checklist is completed, continue to the next page of this module.		

INFORMATION	MATERIALS	LOCATION OF MATERIALS
1. Different types of lamps.		
a. Single pin 		
b. Double pin 		
c. Double pin shielded 		

JOB STEPS

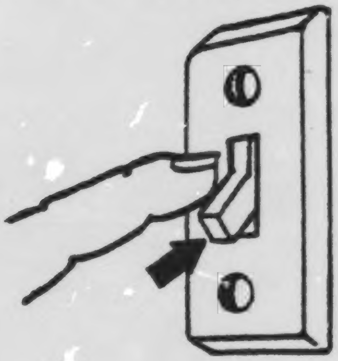
1. Gather your equipment. Use your checklist to be sure that you have everything you will need.

2. Check to make sure the ladder is in working condition.

3. Take equipment and material to the work area.

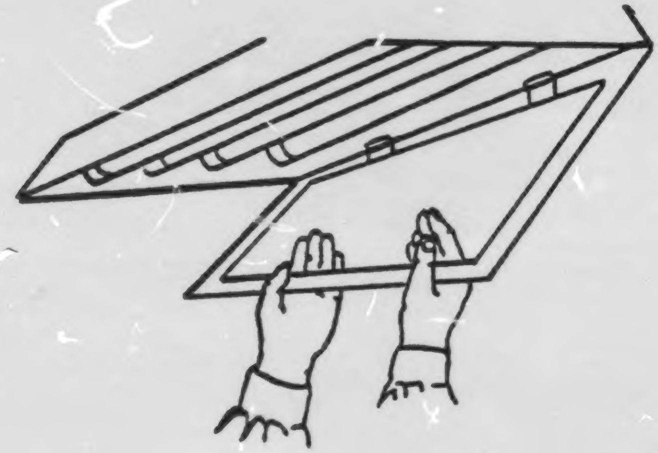
4. Post caution signs on each side of work area.

5. Turn off lamp(s) in area to be serviced.



6. Be sure your ladder is safe and solid under the lamp fixture. Be sure you are high enough on the ladder so you don't have to stretch to reach the lamp.

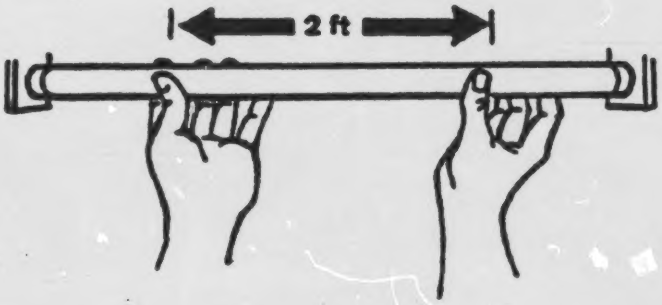
7. Unlatch glass or louver type shields that cover the lamp fixture.



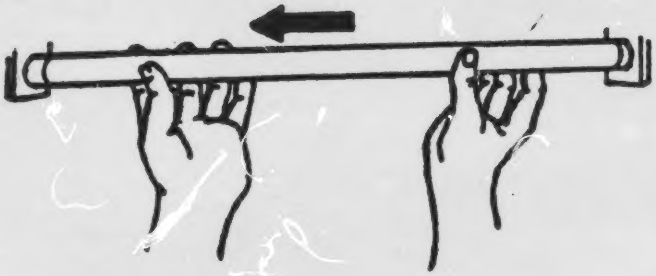
JOB STEPS

NOTICE: Different type lamps are shown and described on page 5.

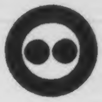
8. For Single Pin Lamps, hold fluorescent lamp at the middle with hands about two (2) feet apart.

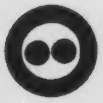
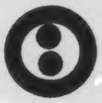


9. Apply slight pressure towards one end. This should free the pin on the opposite end.



JOB STEPS

15. With new lamp in thumb and fingers, line the pins in this manner  , move lamp end directly under the socket.

16. Turn lamp a 1/4 turn from  to 

Hold this position, slide lamp pins up into the vertical slot as far as possible.

17. Now turn lamp 1/4 turn in either direction, until you hear a click. Lamp should be locked into position.

CAUTION: Do not force lamp as it may explode and possibly cause injury.

18. The Double Pin Shielded Lamp is removed and replaced in the same order as steps 8, 9, and 10. Use same precautions. Never force the lamp.

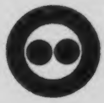
19. Step down from ladder and check your new lamp by turning switch on.

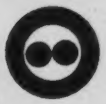
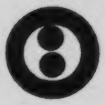
20. Replace glass or louvered shield.

21. Proceed to next fixture and repeat steps for the type lamp you must use.

22. When finished, return all equipment to the storage area.

JOB STEPS

15. With new lamp in thumb and fingers, line the pins in this manner  , move lamp end directly under the socket.

16. Turn lamp a 1/4 turn from  to 

Hold this position, slide lamp pins up into the vertical slot as far as possible.

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****
*   *
*   CAUTION: Do not force lamp as it may explode   *
*   and possibly cause injury.   *
*   *
****

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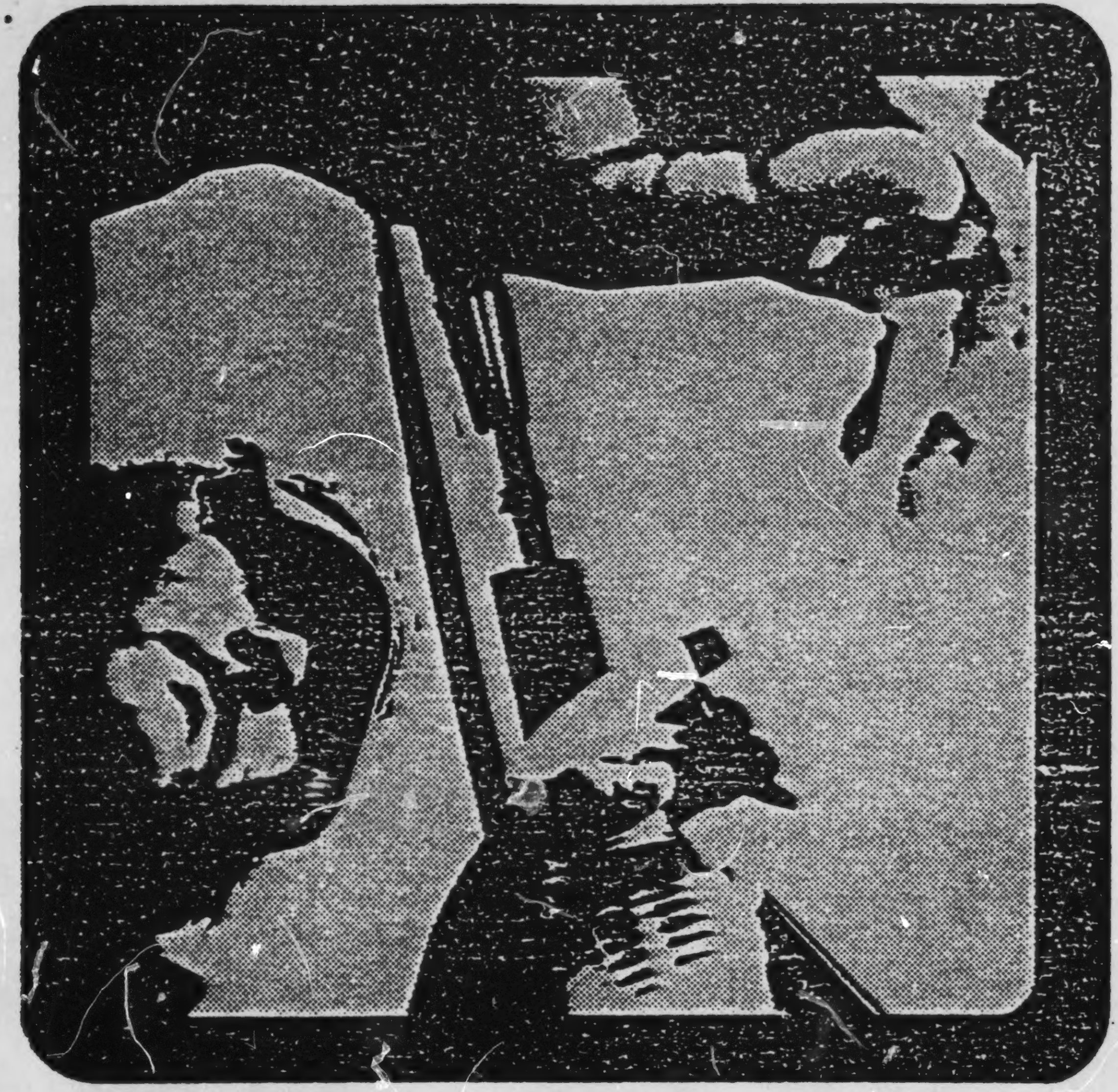
22. When finished, return all equipment to the storage area.



building maintenance & engineering

unit: General Maintenance

capital area career center

module: 2201 02 002. date: 12-13-76 level: 1

skill title: Fluorescent Fixture, Shade and Tube Washing

developed & written by: Buster Crabb

visuals by: Sandra Starnaman

WORD GUIDE

FLUORESCENT - Glowing light

FIXTURE - Holder or connector

LOUVERS - Metal or plastic fins or vanes to cover lights or heat openings. They direct light or heat.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

How to clean fluorescent tubes, glass or plastic lights, louvered type fluorescent shields, and fixtures.

AND IN ORDER TO DO THIS YOU WILL NEED:

Step ladder (see page 3, safety/stepladder)

2 pails

Sponge, wiping cloth

All purpose cleaner

Drop cloth

Table or stand, with castors

Safety/caution signs (see page 3, safety/caution signs)

Helper (if possible)

WE WILL KNOW YOU CAN DO IT WHEN:

You have cleaned a fluorescent tube, shield and fixture.

INFORMATION	MATERIALS	LOCATION OF MATERIALS

Reasons for having clean fixtures and shields:

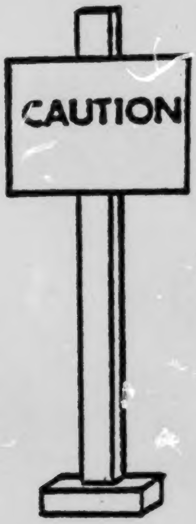
1. Increases the amount of usable light.
2. Reduces ill health (eyestrain, headaches, tiredness, etc.)

The safety needs/step ladder:

1. Is your ladder of the proper height? You should be able to reach the fixture easily.
2. Is the ladder strong enough to hold your weight?
3. Is the ladder sturdy and in good shape?

The safety needs/caution signs:

a. examples:



INFORMATION	MATERIALS	LOCATION OF MATERIALS
3. Washing tanks and table. Some employers use this method for cleaning tubes and shields.		
NOTE: Tanks should be 6 inches to 12 inches longer than longest shield or table to be washed.		
NOW DO:		
1. Check equipment checklist	Equipment Checklist	Maintenance Shop
2. When you know the information on pages 3 and 4, and your checklist is completed, continue to next page.		

JOB STEPS

1. Gather your equipment and material. Use your checklist to be sure that you have everything you need.

2. Recheck safety needs on page 3.

3. Fill both pails 1/2 to 3/4 full of warm water. Then according to the directions on the all purpose cleaner container add the right amount to one pail. The other pail is used for rinse.

4. Move equipment and materials to the work area.

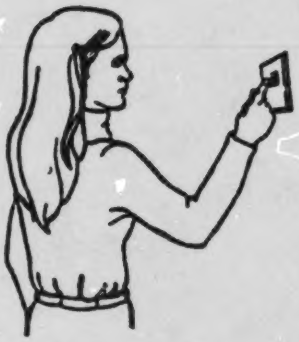
5. Place safety/caution signs in proper places.

6. Place ladder under fluorescent fixture. Be sure it is safe and solid.

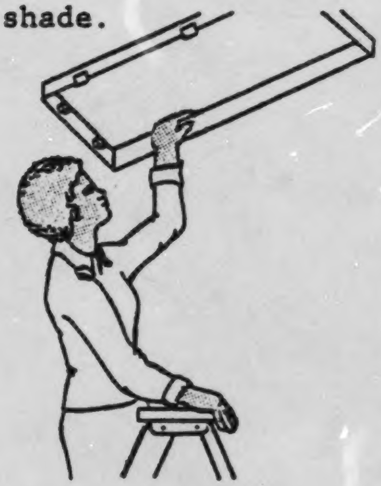
7. If washing tanks are used, place them nearby.

JOB STEPS

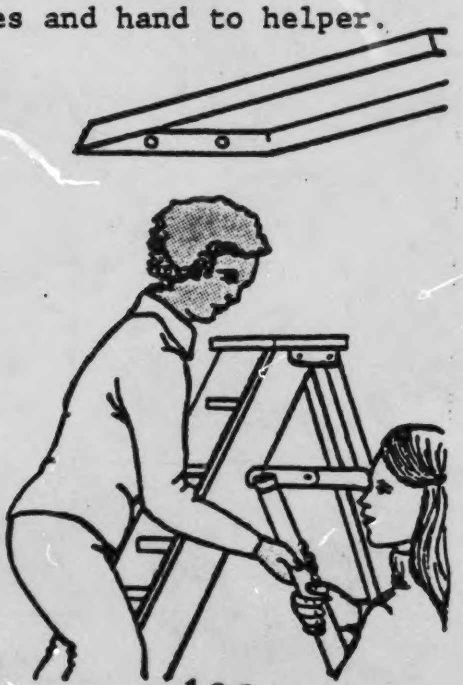
8. Turn off lights!



9. Climb ladder and open shade.



10. Remove fluorescent tubes and hand to helper.

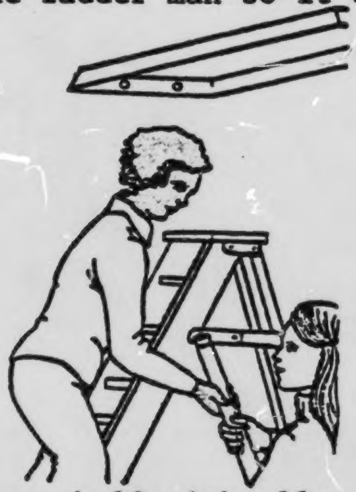


JOB STEPS

11. Wash fixtures with a damp sponge and wipe dry with a clean cloth.

12. The helper should wash the shade and tube and dry with a clean cloth.

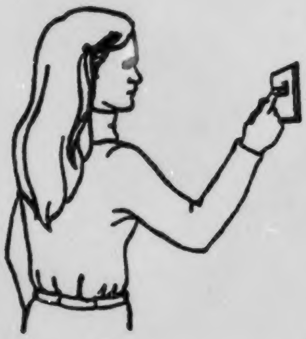
13. Return tube to the ladder man so it can be replaced.

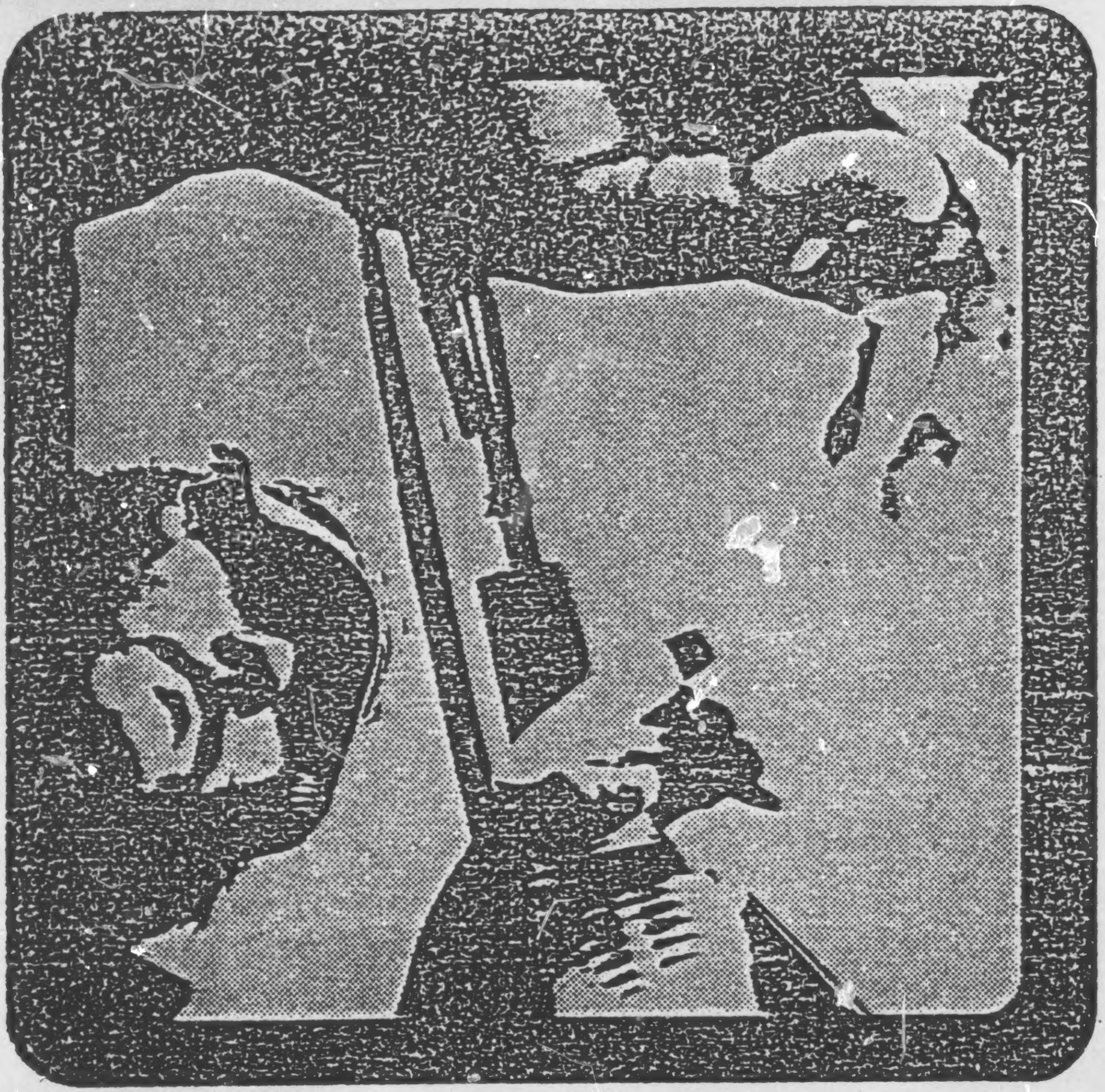


14. Repeat steps 9 through 13 with all tubes in the fixture.

15. Replace the shield.

16. Have helper turn on electrical switch to check fluorescent lamp. If all tubes work well, go to next fixture and repeat steps 6 through 14.





building maintenance & engineering

unit: Wall Care

capital area career center

module: 2201 02 003 date: 12-30-76 level:

skill title: Spot Clean and Wash Walls

developed & written by: Buster Crabb

visuals by: Sandra Starnaman

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

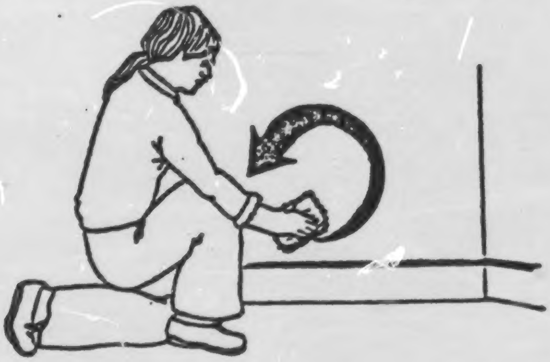
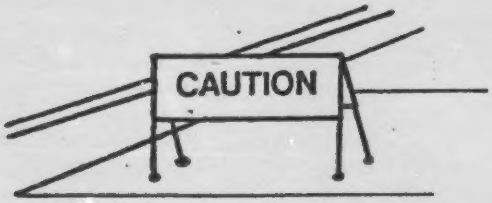
How to spot clean and wash walls.

AND IN ORDER TO DO THIS YOU WILL NEED:

- Hand Duster
- Drop Cloths
- Ladder or Scaffold
- Safety/Caution Signs
- Spray Bottle
- 2 Sponges
- All Purpose Cleaner
- 2 Pails
- Wiping Cloths
- Rubber Gloves
- Steel Wool #00

WE WILL KNOW YOU CAN DO IT WHEN:

You have completed all the job steps by removing all dirt and smudges from the wall.

INFORMATION	MATERIALS	LOCATION OF MATERIALS
1. Wash walls using circular motions. 		
2. Do not allow cleaning solution to run down into a dry or uncleaned area or an area that has been cleaned and rinsed. This causes streaking.		
3. While washing walls, it is best to wash woodwork, molding, door trim and baseboards to save time and labor.		
4. Walls can be washed by machine.	Building and Plant Maintenance p. 350	Library
5. Care of equipment and materials.	Building and Plant Maintenance pp. 351-352	Library
CAUTION SIGNS you will need:  		

JOB STEPS

Prepare Area and Walls for Washing.

1. Make a diagram of all furniture, pictures, drapes or other furnishings that may be in your way.

2. Move furniture aside that will be in your way.

3. Now move all equipment and materials to area for cleaning.

4. Set up ladder or scaffold and make sure it is firmly in place.

5. Dust walls lightly to remove loose dirt and cobwebs.

6. Put your safety signs in proper places.

Washing Walls:

1. To find out how much cleaner to use, begin with 6 ounces of cleaning solution to a 2/3 full bucket of warm water. Keep adding 2 or 3 ounces at a time until the solution cleans the walls.

2. Fill other bucket 2/3 full with cool clear water.

3. Place a clean sponge in each bucket.

4. Squeeze out sponge from solution bucket so it will not drip.

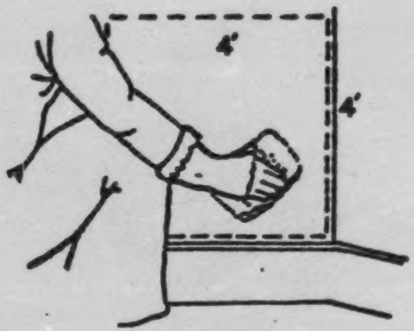
WORD GUIDE

OVERLAP - Re-cleaning a few inches into each cleaned area.

BORDER MARKS - Dirty marks left between to areas cleaned.

JOB STEPS

5. Using either a circular, side to side, or up and down motion, go over a small area, (4 foot by 4 foot), until dirt is washed off.



6. Using sponge from clean water bucket, squeeze sponge and rinse the section washed. Then wipe dry.

7. As you move to the next area to be cleaned, be sure you overlap into cleaned area to prevent border marks.

8. Wash woodwork on doors and windows and also baseboards when you come to them.

9. If you spill or spatter on the cleaned area, immediately wipe off with a clean damp cloth.

10. If rubber gloves are used, (with full length cuff), fold the cuffs over toward your hand. As you wash areas above your head, the water will run into the cuff.

building maintenance & engineering

unit: General Maintenance

capital area career center

module: 2201 02 4 date: 1-31-76 level: _____

skill title: Window Washing and Spotting

developed & written by: Dwight Smith

visuals by: Marie Gougeon

WORD GUIDE

CHAMOIS - Leather hide of sheep.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

How to spot clean or wash windows.

AND IN ORDER TO DO THIS YOU WILL NEED:

- Squeegee
- One bucket
- Chamois or wiping cloth
- Spray bottle
- Glass cleaner
- Dropcloth
- Counter brush
- Ladder (if needed)
- Long handle window brush (for high windows)
- Safety belts (if needed)
- Scraper (razor blade)

WE WILL KNOW YOU CAN DO IT WHEN:

You clean the windows so that they are clean, without spots or streaks.

INFORMATION

Why do you clean windows?

A. To prevent eyestrain. Dirt on windows can shut out up to 30% of the light, which can cause eyestrain.

B. Windows are the eyes of the building. They transmit light and ventilation.

C. Clean windows improve the looks of your building.

Do's and Don'ts

A. Wash windows on shady side of the building.

B. Don't wash windows during high winds or severe cold and ice conditions.

C. Don't use acids for cleaning windows.

NOW DO

Read about the following:

Building and Plant Maintenance, Pages 369-378.

A. Safety factors: Building and Fixtures.

B. Safeguards: Tenents, personnel, customers.

C. Employee's safety factors.

D. Safety hazards: Equipment and Supplies.

When you feel you understand the above information, continue to the next page of this module.

JOB STEPS

1. Obtain equipment and materials and move to the job area. (Where glass is to be cleaned.)

2. Remove any articles on window sill.

3. Raise blinds/shades or open drapes.

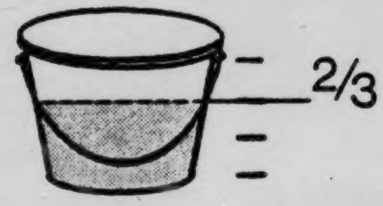
Spot Cleaning Windows

1. Spray a small amount of glass cleaner to cover the dirty spot on the glass. Then wipe clean and dry with a wiping cloth.

2. Go to the next spotted glass.

Washing Windows

1. Fill bucket 2/3 full with warm water, then add 6 ounces of glass cleaner.



2. Place a drop cloth below the glass to be cleaned.

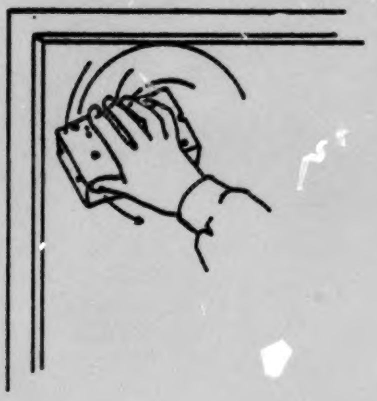
3. Dip a clean sponge into the water and squeeze out lightly to prevent splashing.

WORD GUIDE

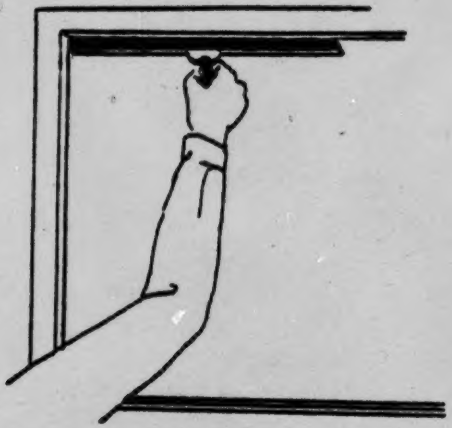
CUT THE WATER - Remove water from the glass.

JOB STEPS

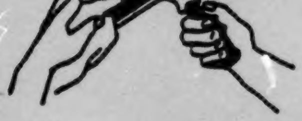
4. Begin at the top left corner of the glass and scrub in a circular motion, making sure of getting all the dirt loosened, so glass can be wiped clean.



5. "Cut the water" from the top left edge of glass using edge of the squeegee.



6. Using a clean cloth, always wipe the squeegee each time it is taken from the glass.

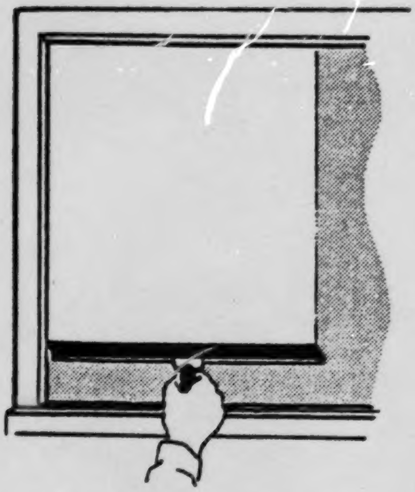


WORD GUIDE

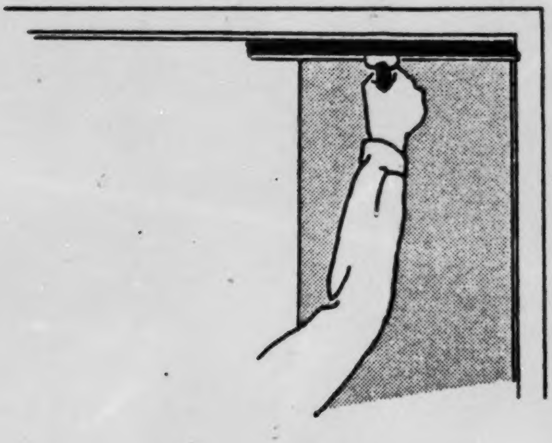
STROKE - Movement

JOB STEPS

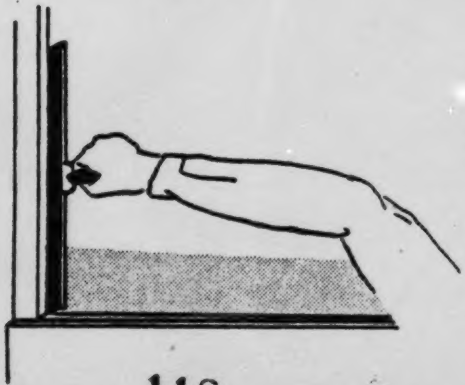
7. Now start at the top left corner of the glass and stroke the squeegee downward to about four (4") inches from the bottom of the glass.



8. Continue your downward strokes with the squeegee and a slight overlap of each stroke until the glass is all squeegeed.



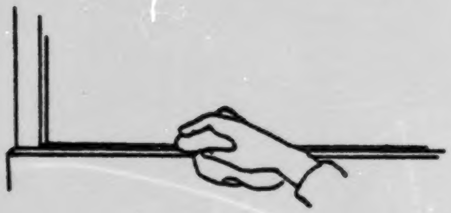
9. Squeegee the lower edge of the glass.



SASH - Frame holding glass.

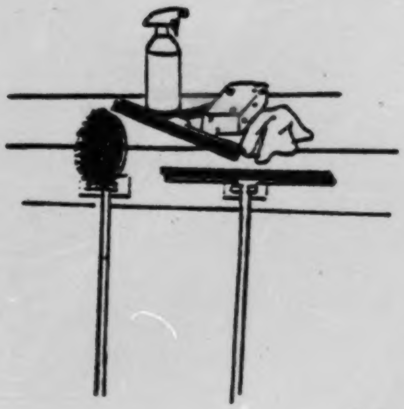
JOB STEPS

10. Wipe all edges of sash with a clean cloth or sponge.



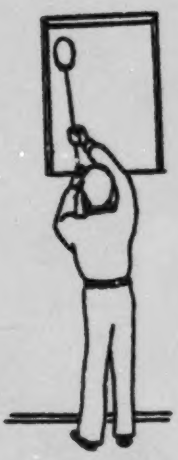
11. Inspect each glass to be sure it is clean.

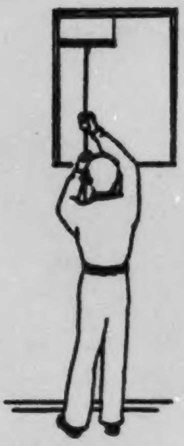
12. When the job is completed, return equipment and materials to the storage room.



JOB STEPS

Washing High Windows

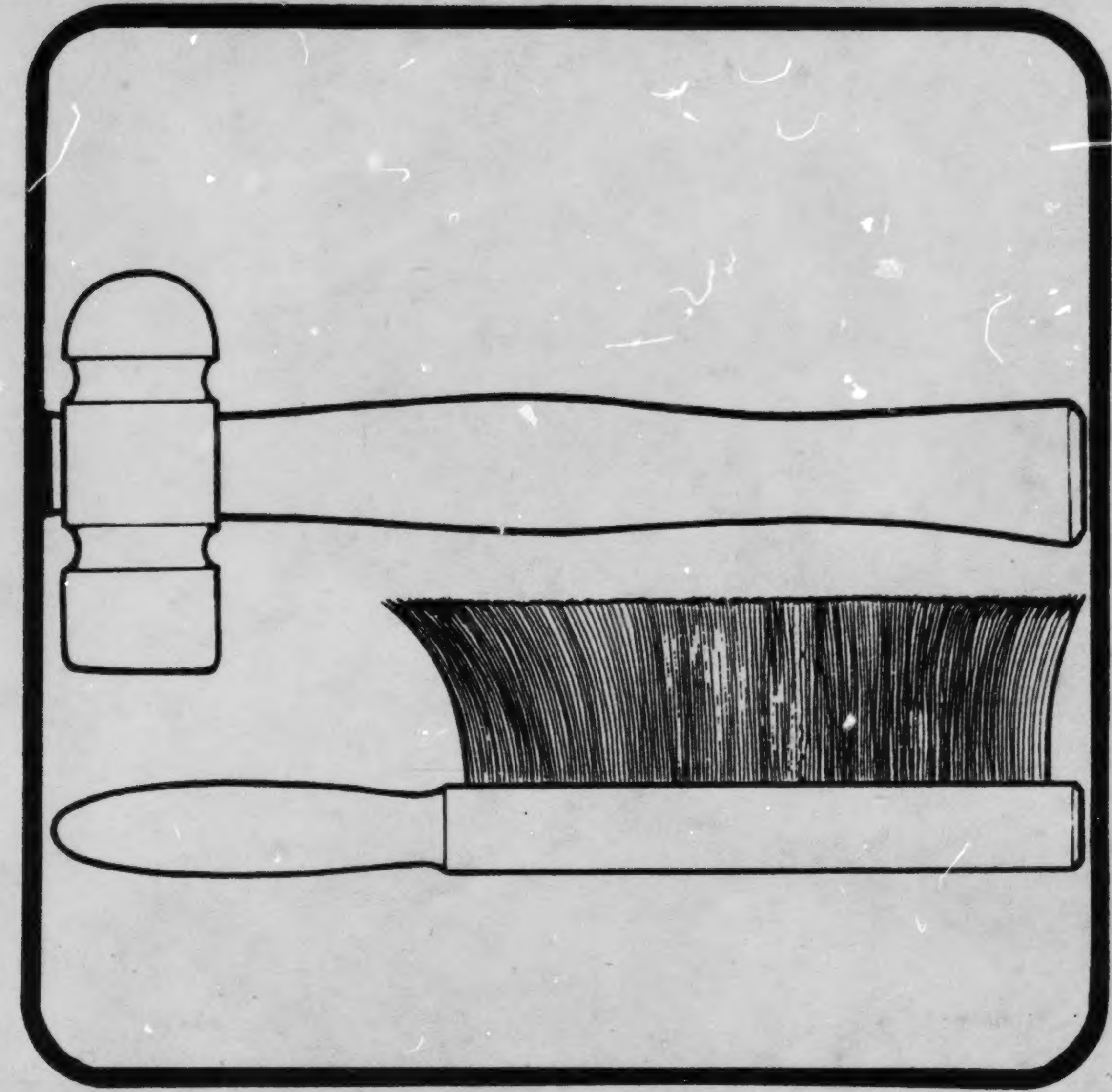




NOTE: When glass cannot be reached without extension handles, the following should be used.

Figure #1 - Scrub glass with a towel wrapped around a squeegee, or use a brush suitable for glass washing, or a sponge attached to a block and handle.

Figure #2 - Squeegee the glass dry as in Washing Windows section, (Steps 8-10).



building maintenance & engineering

unit: EQUIPMENT CARE

capital area career center

module: 2201 02 005 **date:** December 1976 **level:**

skill title: Cleaning and Maintaining Equipment

developed & written by: Buster Crabb

visuals by: Dave Wehrwein

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

How to clean and maintain equipment.

AND IN ORDER TO DO THIS YOU WILL NEED:

All purpose cleaner
Chrome cleaner
Sponges
Wiping cloths
Putty knife
Steel wool
Spray bottle
Metal cleaner (stainless steel, aluminum, brass)
Drying racks
Scrub brush
Screwdrivers
Crescent wrench
Electrical tape
Hammer

WE WILL KNOW YOU CAN DO IT WHEN:

You have cleaned and maintained all equipment and machines used in General Maintenance so that they are clean and ready to use.

INFORMATION

Why do you clean and maintain equipment? Here are a few reasons:

1. Clean equipment makes for clean work
2. Equipment operates easier
3. Employers are more comfortable
4. Failure of equipment is less likely
5. Equipment is SAFER

Don'ts:

1. Use a flammable cleaning chemical in closed areas
2. Use ammonia for cleaning equipment in a small room
3. Coil electric cords up tight
4. Store hose with kinks in it

Discuss the above with your instructor. Tell your instructor the "DON'TS" for cleaning and maintaining equipment.

JOB STEPS

1. Know what equipment you use and take the following care. Collect your equipment and go to your work area.

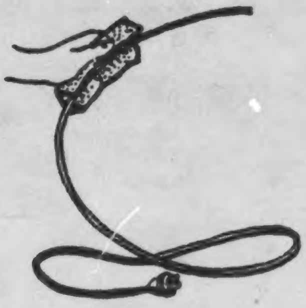
2. Floor Buffing Machine, blocks and pads:

   a. Apply all-purpose cleaner to buffer and completely scrub until machine is clean.

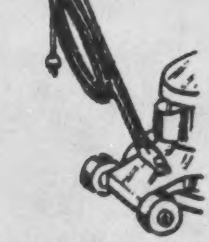
   b. Wipe dry with a clean wiping cloth.

   c. Clean electrical cord with a damp sponge and wipe clean and dry with wiping cloth.

   CAUTION: DO NOT PUT CORD PLUG INTO WATER.



   d. Coil the cord lightly on the handle of the buffer.



JOB STEPS

e. Clean out any dirt within the bristles of the buffer block.

f. When buffer pads are dirty, soak them in hot water with a solution of all-purpose soap cleaner.

g. Scrub pad to get all dirt and old wax out of pad.

h. Hang pad up to drip dry.

i. Never leave buffer block or pad on the floor buffer.

3. Vacuum Cleaner and bags:

a. Follow the above job steps #2a, b, c, d.

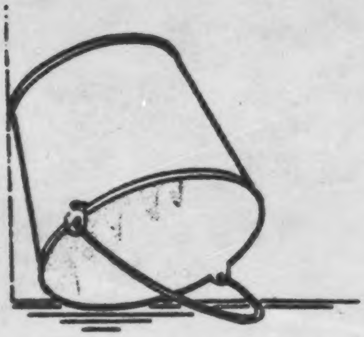
e. Empty vacuum bags as needed, see instructor for special instructions for removal and replacement of clean paper inserts.

f. Check for worn belts or brushes. See instructor for special instructions for removal or replacement.

4. Mop Buckets:

a. Clean with all-purpose soap cleaner and sponge.

b. Rinse and let drip dry (turn bucket up-side down).



JOB STEPS

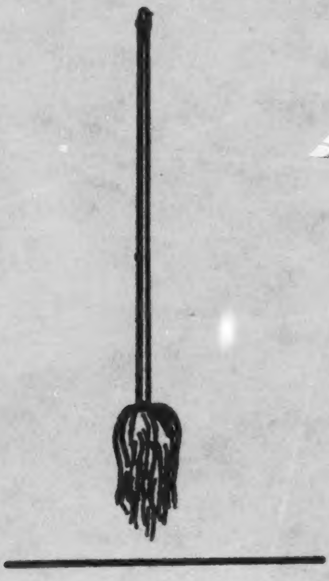
5. Mop Heads:

   a. After each use, rinse the mop well.

   b. Use mop wringer to get all the water out of the mop.

   c. Shake mop to fluff out mop head.

   d. Hang mop head up to dry (have mop head hanging downward).



6. Dust Mops:

   a. After each use shake mop to release loose dust and lint.

   b. Dust mop heads should be changed and laundered each week.

   c. See module "How to Treat a Dust Mop" 2201 01 017.

7. Corn (HOUSE) Broom:

   a. Preparing a new broom for use:

      1. Soak the tip of the new broom in clean water overnight.
      2. Hang up to drip dry before use, with straws downward.

   b. When rising broom, turn broom often so straws will wear evenly.

JOB STEPS

8. **Sponges**:

   a. Wash with all-purpose soap cleaner.

   b. Rinse and wring out to dry.

   c. CAUTION: Use rubber gloves when cleaning a sponge that was used in chemicals or in rest rooms.

9. **Oily Rags**:

   a. Deposit oily rags in metal container until washed.

   b. Wash in hot water and all-purpose soap cleaner or have them commercially laundered.

10. **Flammable Liquid**:

    a. After use be sure lids or screw type caps are tight.

    b. Return containers to metal and secure cabinets.

CAUTION: NEVER USE ANY FLAMMABLE LIQUIDS UNLESS INSTRUCTOR IS INFORMED OR PRESENT.

11. **Lubrication**:

    a. Follow instructions on the particular equipment for the necessary amount of oiling or greasing.

    b. If in doubt, discuss with your instructor.

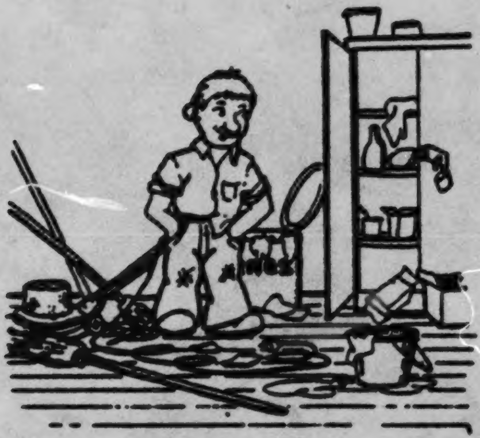
WORD GUIDE

ARSON - causing fires

JOB STEPS

WANTED

12. **Store room:**

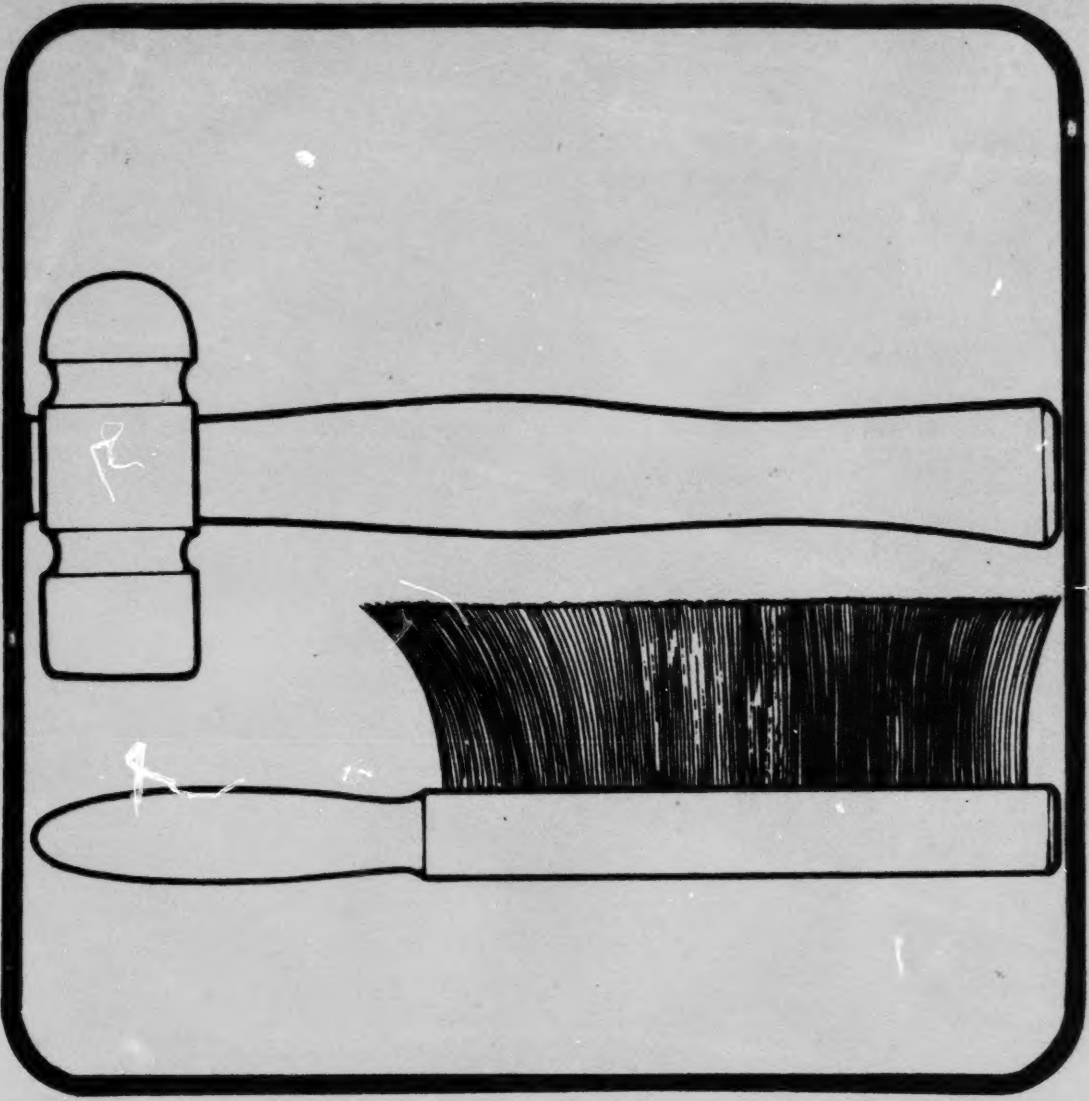


JUNKEY McCLUTTER

This space thief has reportedly been seen in this school. He is a professional in picking up goodies from Directors, Instructors, Counselors, Custodians, "things we could use sometime". He has stolen hundreds of closets, bookshelves, cabinet shelves, attics, basements, boiler room, corners, etc.

Mr. McClutter is wanted for arson in many places. If you see him, don't report it--burn him.

REWARD-usable space safe from a fire hazard.



building maintenance & engineering

unit: GENERAL MAINTENANCE TASKS

capital area career center

module: 2201 02 006 **date:** January 1977 **level:** ______

skill title: Metal Polishing

developed & written by: Buster Crabb

visuals by: Bevan Suits

WORD GUIDE

GRAIN OF METAL - Lines found on metal caused by machining of metal when made.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

How to clean and polish metal surfaces.

AND IN ORDER TO DO THIS YOU WILL NEED:

Wiping cloths

Sponges

Steel wool ("00")

Metal cleaner and polish

All purpose soap cleaner

Oil base paste wax

Step ladder

Pail

Spray bottle

Kerosene

WE WILL KNOW THAT YOU CAN DO IT WHEN:

You know which cleaner to use on which metal; metal is free of tarnish and stain; there is no trace of cleaner or polish left on the metal, and the metal is polished to a high gloss.

WORD GUIDE

GRIT SOAPS - Soap with sand-like texture or grit.

PARAFFIN OIL - Wax-like oil used to seal or coat.

INFORMATION

PRECAUTIONS:

1. Grit soaps should never be used on chrome finishes.
2. Avoid using heavy scouring powders. They scratch the metal.
3. Detergent powders react chemically with chrome, nickel and aluminum fixtures and trim.
4. Never apply metal cleaners and polishes against the grain of metal. If you do, the metal won't shine well.

INFORMATION

Things to know and remember:

1. Metal polish scratches the surface of metal with fine marks, producing a high lustre (shine).

2. Care must be used with metal polish.

   A. If scratches are too fine, no lustre (shine) appears.

   B. If scratches are too coarse, then scratches are visible to the eye and the metal will appear dull.

3. Metal cleaners/polishes require little rubbing and give a beautiful finish to copper, brass, and chrome.

4. A homemade metal polish can be made by mixing paraffin oil, fine scouring powder, and some ammonia, and mix to a smooth paste. Apply it and let it dry, then polish.

JOB STEPS

1. Obtain equipment and materials (according to the type of metal which you want to polish) and move to the job area.

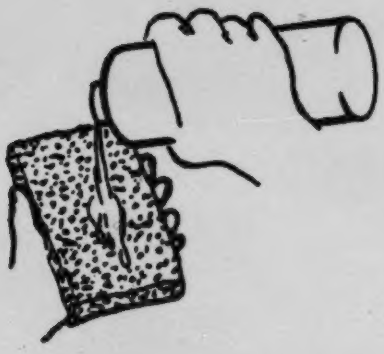
Aluminum

1. Slightly or moderately dirty.
    a. Apply soap solution with sponge.
    b. Rinse with clean wiping cloth.

2. Very dirty.
    a. Use fine "00" steel wool.
    b. Wipe with clean wiping cloth.

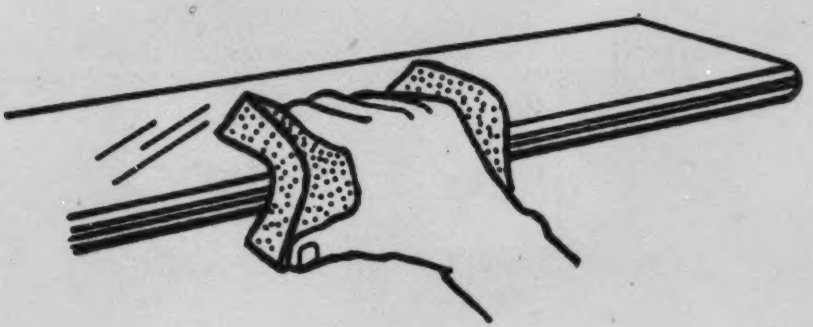
Brass, Copper and Bronze

1. Apply metal polish to a damp sponge.



JOB STEPS

2. Apply the polish to the metal, rubbing in the same direction as the grain of the metal.



3. When a powder film develops, use a clean wiping cloth and polish the metal by rubbing in the direction of the grain.

Chrome (plating)

1. Apply a soap and water solution, with a sponge or spray bottle.

2. Wipe dry with a clean wiping cloth.

3. If grease has formed on chrome, apply kerosene to a wiping cloth and clean.

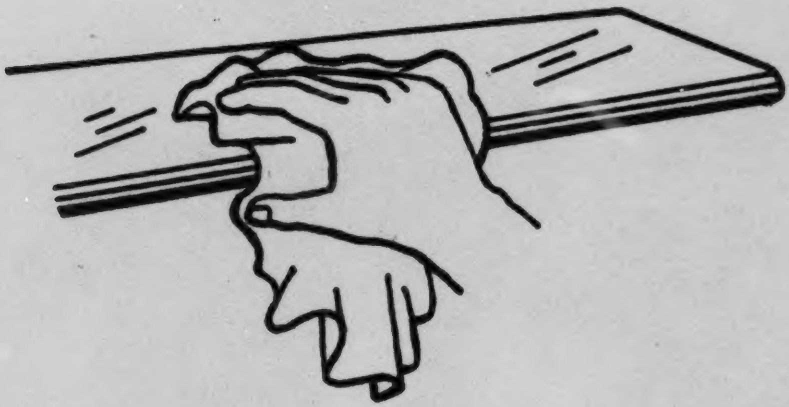
JOB STEPS

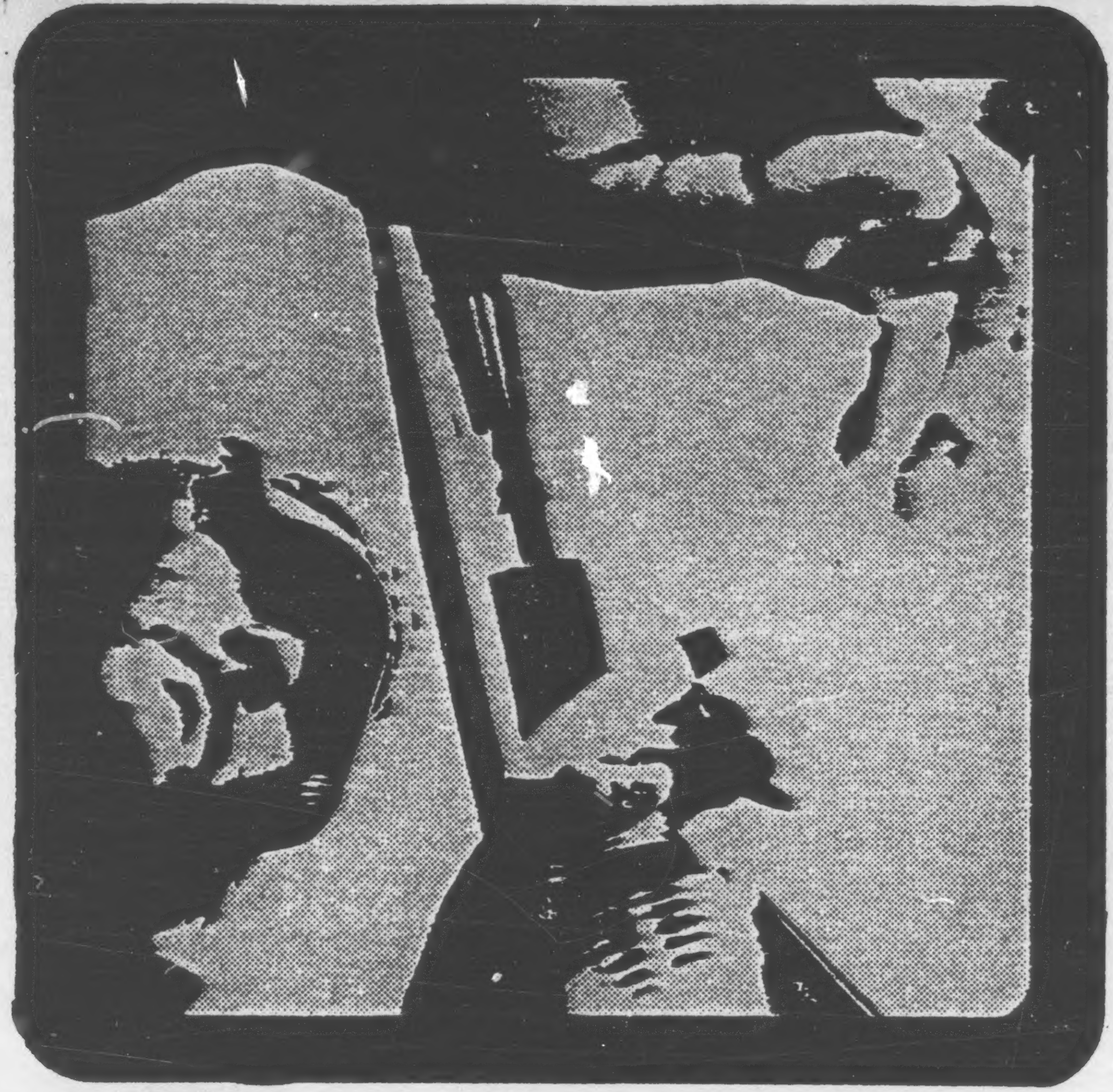
4. Wipe with a clean dry cloth.

Nickel (plating)

1. Apply a soap and water solution with a sponge or spray bottle.

2. Wipe dry with a clean wiping cloth.





building maintenance & engineering

unit: BUILDING MAINTENANCE

capital area career center

module: 2201 02 007 date: 2/77 level:

skill title: Security

developed & written by: Buster Crabb

visuals by:

PERFORMANCE OBJECTIVE

You Are Going To Learn:

How to protect and secure your building and equipment.

And In Order To Do This You Will Need:

Flashlight

Keys

List of important telephone numbers

We Will Know You Can Do It When:

You are able to secure your building and can tell your instructor the important things that you must remember.

WORD GUIDE

AUTHORIZED - Allowed, given permission to be there.

INFORMATION

You Must Know:

1. The location of all doors and gates and how they are locked.
2. The location of all light switches.
3. The location of all alarms and how they work.
4. All important telephone numbers.
5. What keys are used for every lock.
6. Who is authorized to be in your building at all times.

WORD GUIDE

SENIOR PERSONNEL - Next in charge.

JOB STEPS

Emergencies:

1. Make a list of all important telephone numbers, such as the fire department, police department, ambulance service, your supervisor, and next two senior personnel.

2. Make sure the list is by the telephone you use most often. Also put a copy in your wallet.

3. Discuss with your instructor the situations that may require emergency telephone calls.

Fire Prevention:

1. With a copy of your building or work area layout plan, tour the areas and check on the following.

2. Find locations of fire alarm boxes and be sure you know the instructions for proper use given on the boxes.

3. Find locations of fire alarm systems outside of your building, (if any).

4. Find the location of all fire extinguishers. See module 2201 02 015 for use and maintenance of fire equipment.

5. Be sure dirty/greasy rags are in proper containers:
    a. metal trash cans
    b. metal sheds

WORD GUIDE

UNAUTHORIZED PEOPLE - Not supposed to be there.

SMOTHER - Take away oxygen.

JOB STEPS

6. Insure that all corridors to emergency exits and fire extinguishers are clear of:
    a. boxes
    b. storage materials
    c. tables/chairs

7. Find locations of fire blankets.

    Remember the use of fire blankets:

    a. If person's clothes are on fire, immediately get blanket.
    b. Lay person down and roll them up in the blanket. The blanket will smother the flame.

Locking of doors and gates:

1. Be sure all people are out of building, if required.
2. Inspect outside area for any unauthorized people, cars, or objects.
3. Make sure authorized people have keys to the building in case of emergency by use of:
    a. emergency key list in office.
    b. personal check.
4. Be sure roof doors are locked.

WORD GUIDE

PERIMETER FENCE - Outer fence of building or area.

JOB STEPS

5. Double check and lock hazardous areas.

6. Check perimeter fence for holes and check entrance gate and lock.

7. Check for anything uncommon in the area.
    a. vehicles in fire lanes.
    b. vehicles parked too close to building to block emergency entrance.

Close Windows:

1. Close all windows on completion of workday and lock them. Be sure of all first (1st) floor windows.

2. Double check windows immediately upon warning of a high wind storm approaching.

3. In case of a broken window, place a temporary protection over the broken glass as follows.
    a. measure size of area for temporary covering.
    b. cut plywood, masonite, or what ever material is available.
    c. be sure to make a detailed note to your boss
        1. exact location of temporary repair.
        2. material used.
        3. complete size of glass for replacement.
    d. if required, notify the police

JOB STEPS

Turn Off Lights:

1. When not in use.

2. Know which lights are to be left on for security reasons inside of building or area. See your instruction sheet located at your office.

3. Know locations of MAIN SWITCHES and BREAKER BOXES. See your instructor.

Emergency Lighting:

1. Check all EXIT LIGHTS.

2. Check outer security lights.

3. Check all inner emergency lights. See building or area printout at your office.

Safeguard Tools and Equipment:

1. Clean and store your tools and equipment. See mod on cleaning and caring of equipment (2201 02 005).

WORD GUIDE

HOT LINE - An electrical line that is connected or plugged in.

JOB STEPS

2. Store gasoline or other flammable materials:
    a. metal containers
        1. cans with a lid
        2. metal flip top containers
    b. metal sheds with cement floors
    c. low temperature areas
    d. in isolated areas (if possible)

3. Inspect lead-in wires to electrical equipment for bare wiring or improper connections. If found turn off main switch to that equipment - see printout at your office.

4. Disconnect any electric driven tools found plugged into a hot line.

JOB STEPS

5. Insure all electrical equipment is grounded before using.

6. Turn off all equipment not necessary for after hour maintenance, such as:

    a. typewriters
    b. motors
    c. coffee pots
    d. radios
    e. T.V.s
    f. electric heaters

Check For Any Unauthorized People in Building:

1. Your instructor or next in charge will advise you of who is authorized after closing hours by either,

    a. written instructions
    b. verbal

2. When spotting an unauthorized person, proceed as follows.

    a. approach the person in a polite and respectful manner.
    b. ask the person for identification and authorization permit, if required.
    c. if person is not authorized, then escort them to the office and call proper authorities in accordence with your instructions.

Breaking-in and Vandalism:

1. Know location of nearest telephone.

2. Know who to call and report incident, such as:

    a. Police
    b. Next in command or higher
    c. Double check your written instructions

building maintenance & engineering

unit: Glass Care

capital area career center

module: 2201 02 008 date: 1/6/77 level:

skill title: The Removing, Cutting and Replacing of Broken Glass

developed & written by: Buster Crabb

visuals by: Marie Gougeon

WORD GUIDE

GLAZIER POINTS - Used to wedge glass in while it's being glazed.

SASH - Frame that glass is laid onto.

PERFORMANCE OBJECTIVE

You Are Going To Learn:

How to remove, cut, and replace broken glass.

And In Order To Do This You Will Need:

- replacement glass
- glazing compound
- putty knife
- wood chisel
- pliers
- pencil
- wire clips
- glazier points
- container for broken glass
- tape measure
- sash, frame or door
- hammer
- scratch pad
- gloves (for handling broken glass)

We Will Know You Can Do It When:

You have inserted the glazier points so that glass is held firmly against sash, frame or door. Glazing compound is spread smooth, even, and tight against the sash frame. The glass is clean of dirt and smudges.

INFORMATION	MATERIALS	LOCATION
Why do we replace broken glass? Nothing gives a building a more run down look then broken/cracked glass in windows and doors. Also it could be very dangerous. Someone could be cut. Public building safety codes usually require the use of double strength glass or the use of thermopane (two panes of glass with air space in between) glass. NOW DO: Watch the slide tape for this module. After you have watched the slide tape, follow the module job steps to replace broken glass. Be sure to ask your instructor if you don't understand the slide tape or job steps.		

WORD GUIDE

RABBET - Edge of sash frame that glass rests on.

EXPANSION - Wood changes size as temperature changes.

JOB STEPS

A. REMOVAL OF GLASS:

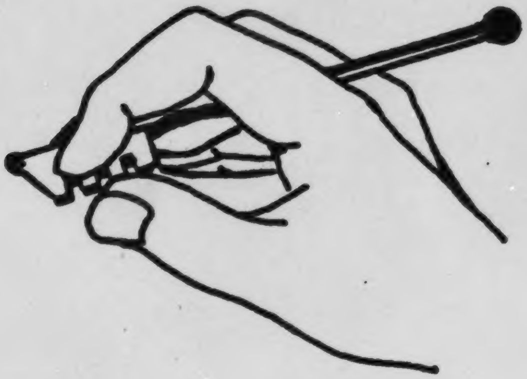
1. Remove all broken pieces of glass that are loose. Save larger pieces of the old glass as it could be cut to fit smaller windows. Collect your equipment and take it to your work area. Be sure to wear safety glasses.
2. With the use of a putty knife or wood chisel and hammer, remove all glazing or putty compound and any glazier points. Be sure the rabbet area of the sash is completely clean so glass will lie flat.
3. Using your tape measure, check the size of the inner openings of your sash.
4. Have glass cut 1/8 inch shorter on length and width to allow for expansion.

B. CUTTING THE GLASS:

1. Make sure glass is clean.
2. Lay glass on a flat surface.
3. Dip cutting wheel into a light oil.

JOB STEPS

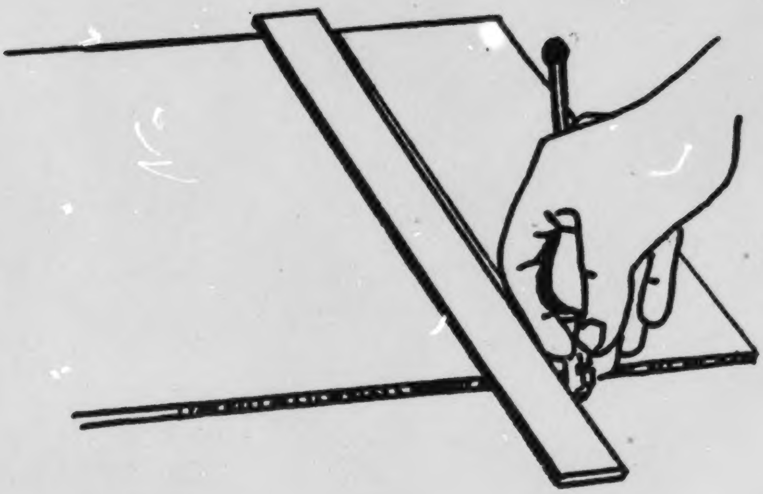
4. Fold cutter upright between first and second finger with thumb against notches.



NOTE: To get feel of cutter, make a few cuts on some scrap pieces of glass.

5. Measure size of glass for proper cut. Mark it with a scratch from cutter.

6. Along a straight edge, start cut 1/16 inch from farthest edge of glass.



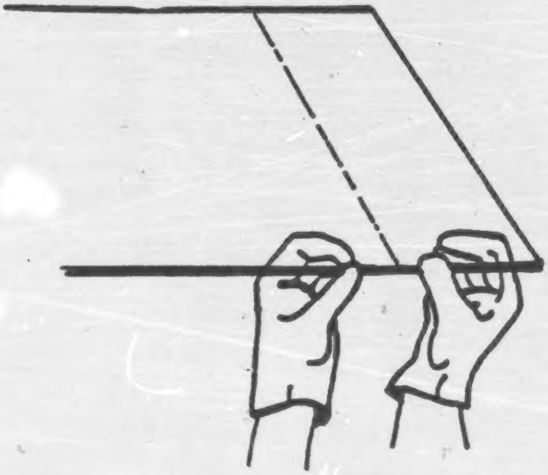
JOB STEPS

7. Do not apply heavy pressure on cutter wheel.

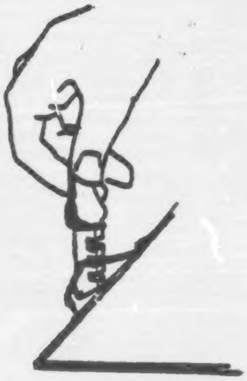
8. Draw cutter across glass with a firm non-stop stroke, allowing wheel to drop off the edge of the glass.

9. Break glass by holding glass between the first finger and thumb of both hands and giving the glass a slight bend.

CAUTION: Wear gloves



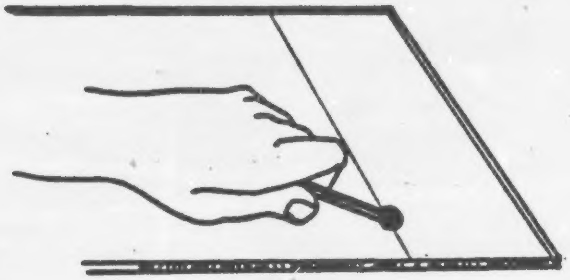
10. Use notches on cutter to break off small cuttings or slivers of glass.



WORD GUIDE

RABBET - Edge of the sash frame that glass rests on

11. Another method of breaking the cut is to use the top (the ball) of the cutter to tap the bottom of the cut. This will form a deep crack under the cut. When crack extends the full length of cut, line the cut up with the edge of the cutting board. Snap off with a sharp downward movement.

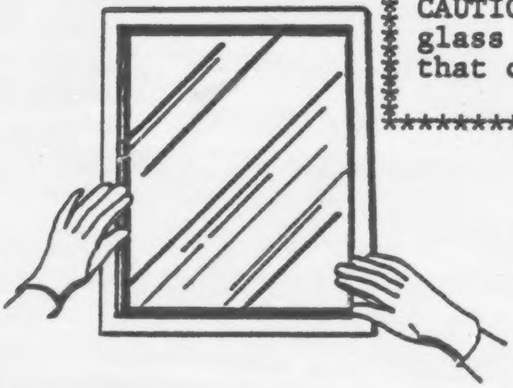


C. REPLACING OF GLASS:

1. Using putty knife spread a thin layer of glazing compound around complete edge of rabbet to form a seal for the glass.

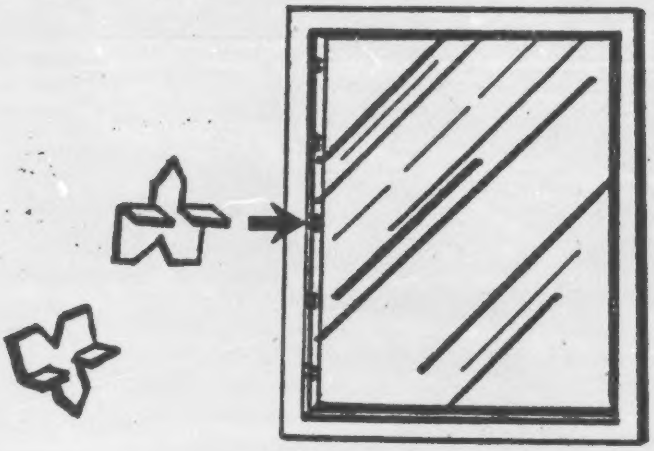
2. Place glass on rabbet and press gently to seal glass.

CAUTION: Do not rub along edges of glass as there may be rough edges that could cut your fingers.



JOB STEPS

3. On a wooden sash, use the glazier's points to hold glass to window sash or frame. Glazier's points should be placed every four (4) inches to hold glass.



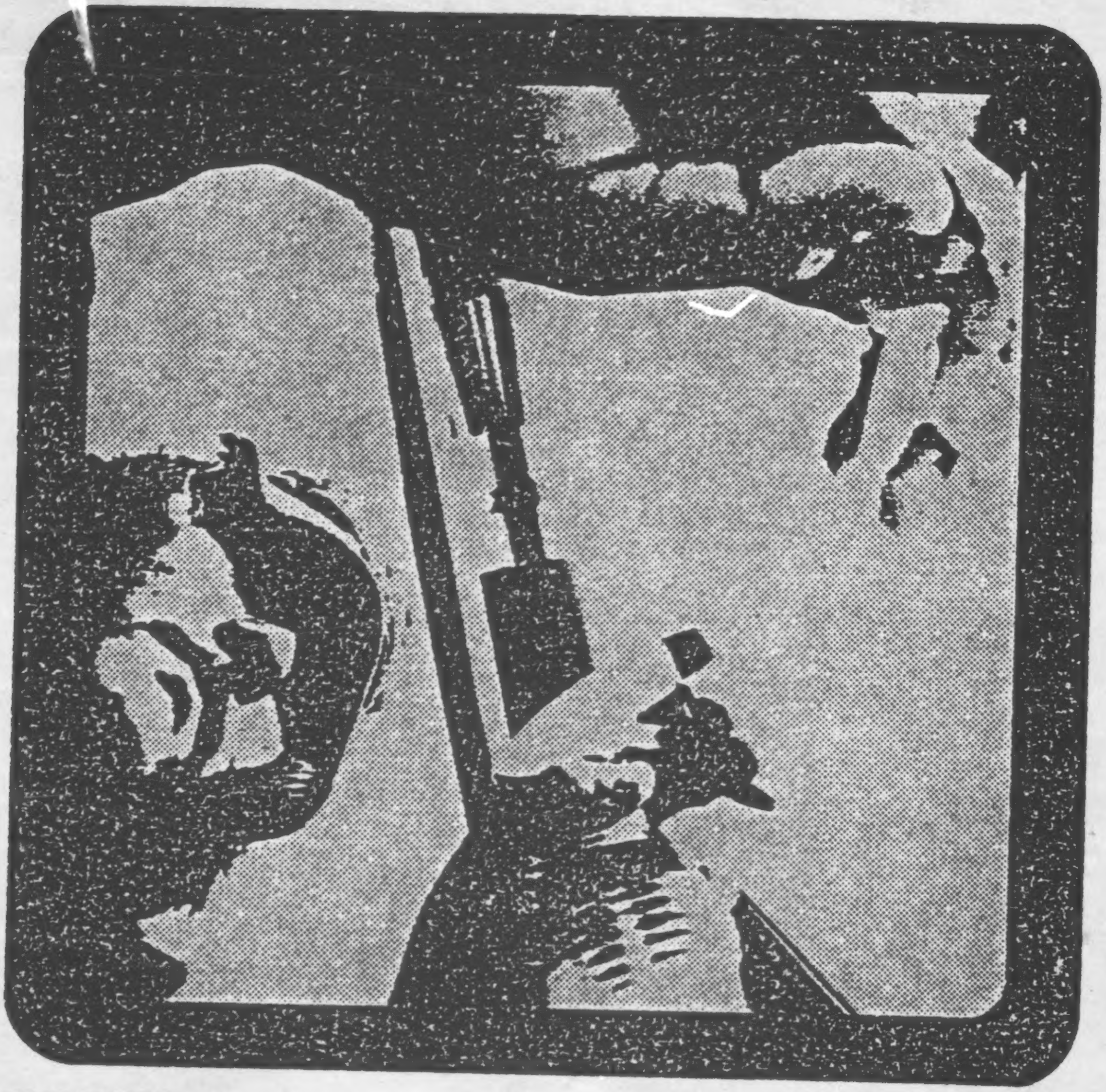
4. With the putty knife, spread the glazing compound around sash and smooth out from the bottom edge of rabbet to the top edge of the rabbet.

5. Remove excess glazing compound and clean glass with a soft cloth.

   NOTE: Be careful to not touch the smoothed out compound as it will still be soft.

6. Glazing compound will not harden completely, so be careful when replacing the window sash into the frame.

7. Put away all equipment.



building maintenance & engineering

unit: Damaged Walls

capital area career center

module: 2201 02 009 date: 1/77 level:

skill title: Repair Damaged Wall

developed & written by: Buster Crabb

visuals by: Bill Draper

PERFORMANCE OBJECTIVE

You Are Going To Learn:

How to repair a damaged wall.

And In Order To Do This You Will Need:

- sand block and sand paper
- a damaged part of a wall
- plaster
- dry wall
- dry wall tape
- tape measure
- pail
- spackling putty
- patching plaster
- plaster spatula
- dry wall tacks (nails)
- hammer
- steel trowel
- pencil and pad
- sponge
- stirring stick
- bench brush

We Will Know You Can Do It When:

The wall you have repaired has no bumps or scratches and no paper tape is showing through the plaster.

INFORMATION

There are many reasons for repairing damaged walls.

A. Stops more cracking.

B. Stops drafts.

C. Stops loss of heat.

D. Makes the room nicer to look at.

Because there are many types of walls, there are many different ways to repair them. If you have a question ask your instructor.

Your instructor will explain and show you the different methods of wall repair.

We will cover the most common damages.

WORD GUIDE

STUD - Thick boards inside wall.

JOB STEPS

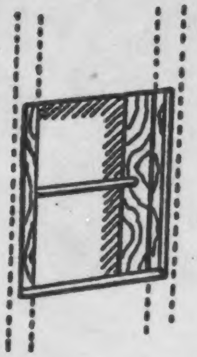
1. Check the damaged area to see what type of wall you must repair. It could be dry wall, plaster, plywood or paneling.

2. Dry Walls (Plaster board):

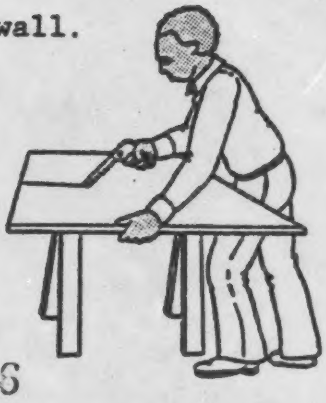
   a. Cut away damaged dry wall and examine the area for any electrical wiring. If there is electrical wiring, turn the current off.

   b. After the current has been turned off, continue cutting carefully.

   c. Measure the area to be replaced so that the new piece will overlap half way onto the studs of each side. Be sure studs are free of nails.



   d. Cut a new piece of dry wall.



JOB STEPS

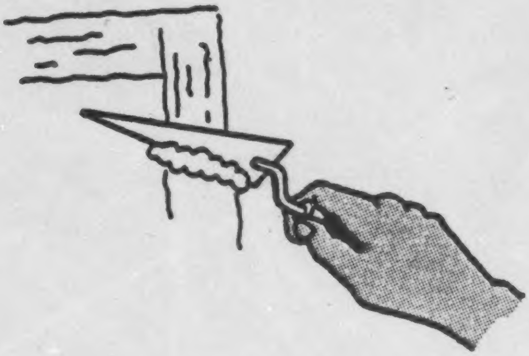
2.

e. Preparing joint compound (powder):

1. Use a clean pail.
2. Add one (1) pound of joint compound to 1/2 pint of warm water.
3. Stir joint compound mixture to a smooth paste.
4. Let mixture set for 30 minutes.
5. Restir the mixture. Add water to joint compound as needed to keep a smooth paste.

f. Applying compound and dry wall tape:

1. Apply compound paste to seams of new and old dry wall. Cover two (2) inches on each side of joint.
2. Cut dry wall tape to proper length of each seam/joint to be covered. Soak dry wall tape lightly in clear water.
3. Taking a pressing (steel) trowel in one hand, press tape into the compound on the seams or joint. Trowel evenly and smoothly, scraping off excess compound.



JOB STEPS

2.

f.

4. Spot check nail heads and fill in as needed with compound.

5. If compound has dried completely, then apply a thin coat and feather out to 3 inches or 4 inches on both sides of crack. Now apply second coat to nail heads.

6. When compound is dry, apply a thin coat and feather out to 8 inches or 10 inches on both sides of seam/crack. Also apply third coat to nail heads.

7. When completely dry, sand to a smooth and even surface. Take care when sanding the taped area as you don't want to scuff or scratch the surface paper of the wall board.

3. Plastered Walls:

a. When to use spackling putty.

1. In hair line cracks and up to 1/8 inch wide.

2. In nail and screw holes where the plaster has not broken away.

3. For nicks and cracks around trimmings.

NOTE: Follow instructions on container of spackling putty.

b. Patching plaster:

NOTE: Used for cracks over 1/8 inch wide and areas up to about a foot square.

WORD GUIDE

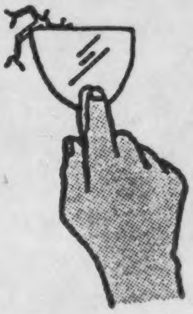
SMALL BRUSHING - A thin coat.

JOB STEPS

3.

b.

1. Undercut the edges of cracks and small patches to make them wider at the bottom than at the top.



2. Brush away all loose particles. Using a brush, soak old plaster area with water. Watering prevents rapid loss of the moisture from the patching plaster.

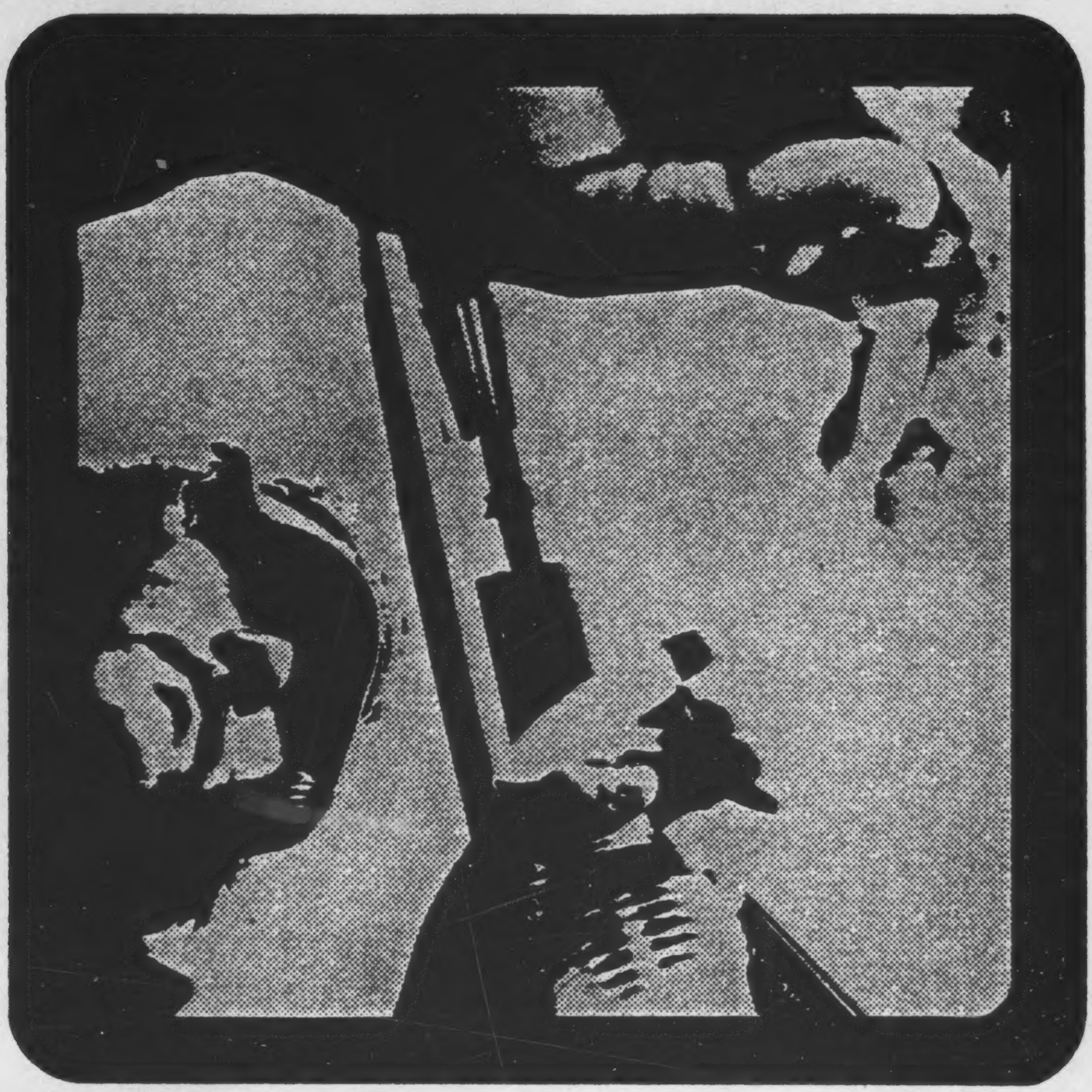
3. Mix water with patching plaster and stir until you have a smooth paste.

NOTE: Don't mix more than you need as it will become hard in 10 to 30 minutes.

4. Press plaster firmly against the under edges with putty knife and continue this application until final application matches existing wall finish.

5. Apply a small brushing of shellac to repair area. This seals the area and prevents a dull spot showing through when painted.

6. For other types of walls see instructions manual or your Instructor.



building maintenance & engineering

unit: Painting

capital area career center

module: 2201 02 011 date: 1/77 level:

skill title: Interior Painting

developed & written by: Buster Crabb

visuals by: Glen Cooley

PERFORMANCE OBJECTIVE

You Are Going To Learn:

How to paint interior surfaces.

And In Order To Do This You Will Need:

- pail
- paint brush 2", 3" or 4"
- paint
- primer (if needed)
- scraper
- putty and putty knife
- caution signs
- safety glasses
- rags
- filler (putty, plaster etc.)
- thinner
- sand paper
- paint roller, pan and handle
- roller and brush cleaner
- ladder
- dropcloth
- edger
- paint stick
- check list and pencil
- sponge

We Will Know You Can Do It When:

The interior surface you have painted is free of cracks, marks, grease. The area is evenly and completely painted. There are no spills or splatters.

WORD GUIDE

FIRE-RETARDANT PAINTS - Paints that slow down burning of wood etc.

INFORMATION

Three things you should do when you paint interior areas:

1. Create cheerful room.
2. Choose colors that are comfortable for eyesight.
3. Provide reflection to aid lighting.

Proper selection of paints; a few things to remember:

1. Ease of washing.
2. Reputation of manufacturer.
3. Reflective power
4. Ease of application.
5. Ability to cover old painted surface.

NOTE: MANY STATES REQUIRE FIRE-RETARDANT PAINTS IN PUBLIC PLACES.

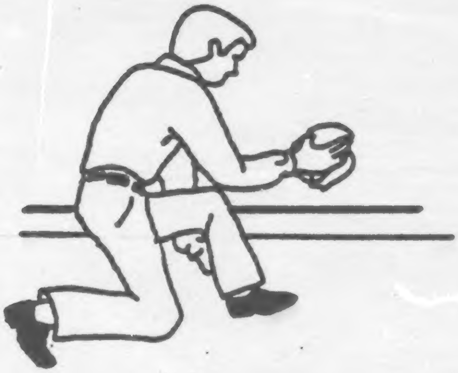
Ask your instructor to assist you in choosing the right paint for the job.

JOB STEPS

1. Take all equipment and materials to work area.
2. Lay drop cloth on floor and install caution signs in proper places.
3. Be sure area is well-ventilated.
4. Be sure that ladders are sturdy.
5. Check area to be painted for any cracks or rough surfaces.
6. Scrape, sand or fill in any cracks so that area is smooth.

JOB STEPS

7. Damp wipe area of all dust and then wipe dry.



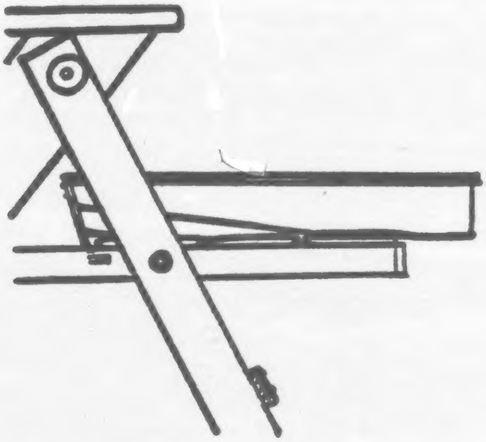
8. Stir paint to be sure it is mixed properly.

9. The order of painting a room is:

   Ceiling (first)
   Walls (second)
   Trim (last)

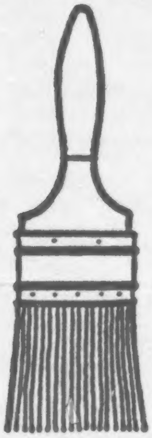
10. Roller painting:

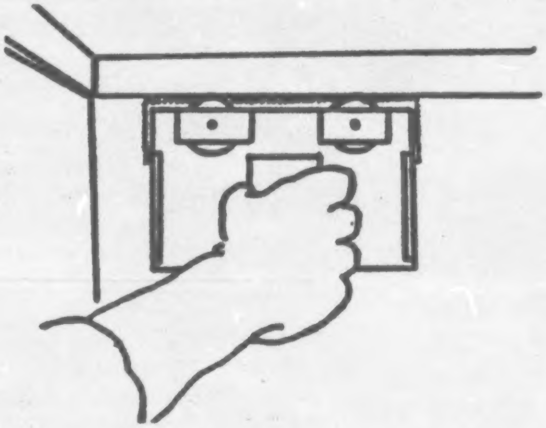
    a. Secure roller pan to ladder shelf.



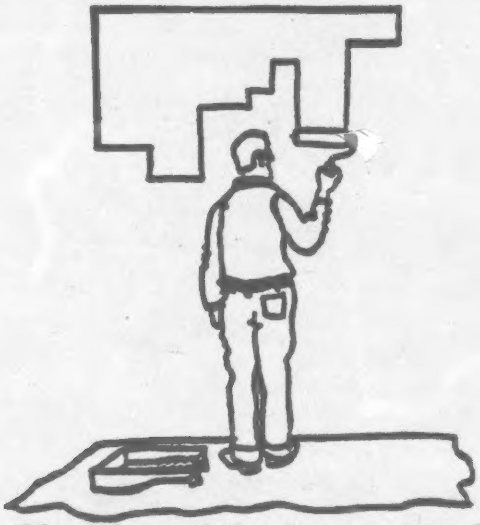
JOB STEPS

10. b. Use proper width brush (2 or 3 inch) or paint edger to paint along edges and in corners where roller can not get.





c. Start roller from upper area of walls and work across wall and then downward. Use even shakes to assure complete coverage.



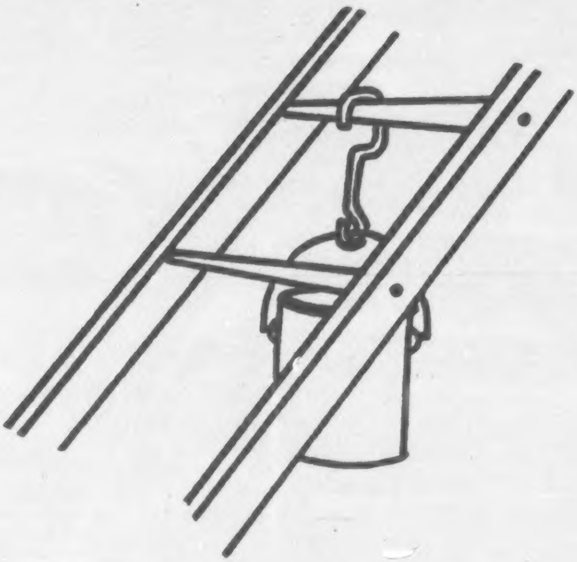
d. Be sure you roll paint with the grain of the surface, (walls, up and down; ceiling, length of ceiling)

e. If latex paint is used, roller may be cleaned in warm water. If any other types, such as oil base or enamel, a thinner can be used.

JOB STEPS

11. **Brushing**:

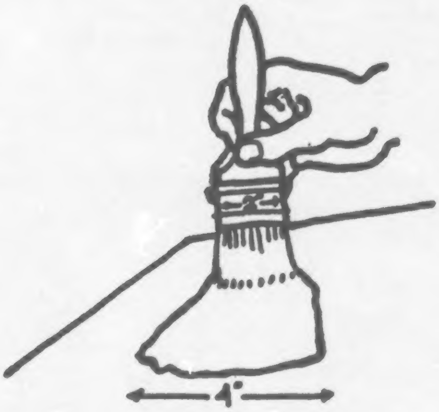
    a. Fasten wire hanger to ladder to hold paint container.



    b. Use a 3 or 4 inch paint brush, dip brush into paint can about 2 inches.

    c. When removing brush from can, gently press brush against top inner edge of can. This removes paint from one side and helps prevent dripping.

    d. Brush paint on area two width's of the brush. Brush back and forth on ceilings and up and down on walls.



WORD GUIDE

8

FEATHER - run over the place you painted before by spreading brush.

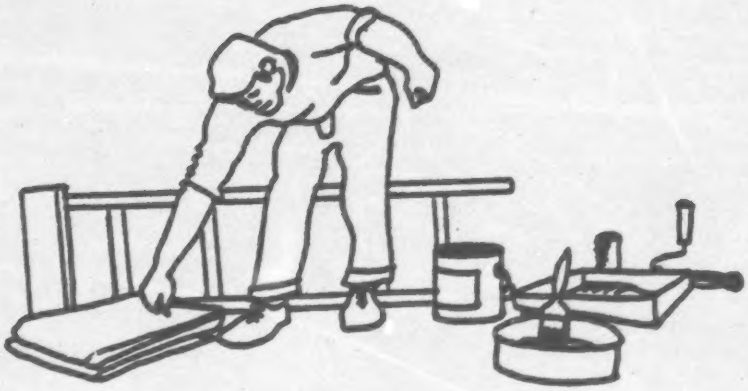
JOB STEPS

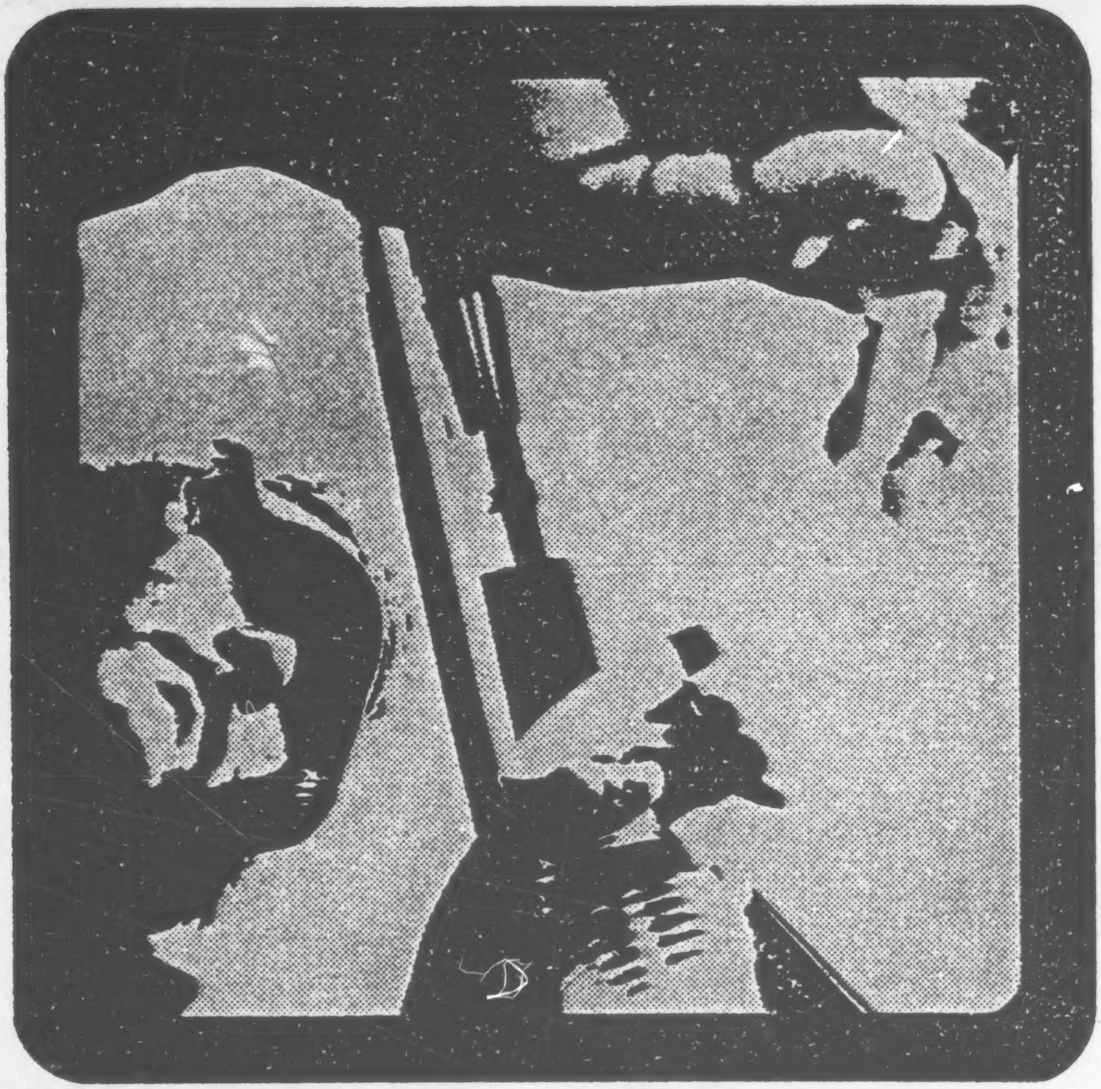
11. e. Repeat steps c and d until area is completely covered. Feather into areas just painted. Be sure to spread paint

    f. If latex paint is used, brush can be washed with warm water. For other types, such as oil base and enamel, a paint thinner should be used.

12. Clean up any drippings.

13. Fold up the drop cloth, clean materials and return to storage.





building maintenance & engineering

unit: Painting

capital area career center

module: 2201 02 012 date: 1-26-77 level: _____

skill title: Exterior Painting

developed & written by: Buster Crabb

visuals by: William Draper

WORD GUIDE

EXTERIOR - Outside.

PERFORMANCE OBJECTIVE

You Are Going To Learn:

How to paint exterior surfaces.

And In Order To Do This You Will Need:

bucket
paintbrush 2" 3" 4"
paint
primer (if needed)
scraper
thinner
paintroller, pan & handle
roller & brush cleaner
paintedger
checklist & pencil
putty and putty knife
caution signs
safety glasses
rags
filler (putty, plastic, etc.)
sandpaper
ladder
dropcloth
paintstick
sponge

We Will Know You Can Do It When:

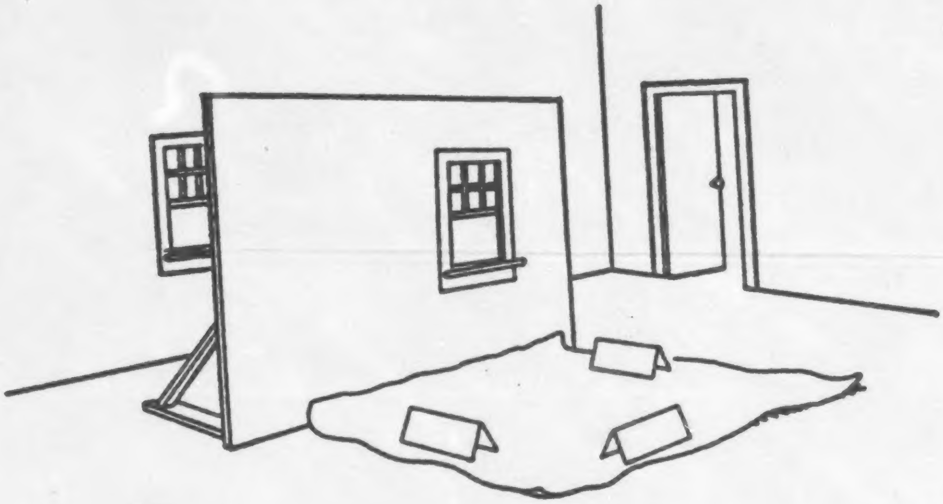
There are no runs, spills, or drips on the area you have painted, and there are no cracks, marks, or grease spots on the area

INFORMATION	MATERIALS	LOCATION OF MATERIALS
Exterior painting requirements vary because of the climate, location and the way you want the job done. Most exterior surfaces require painting every four to eight years. Exterior painting should be scheduled during warm and/or dry seasons. Painting is done to improve and maintain the look of surfaces, and to protect the surface from water and sunshine. NOW DO: Read directions on paint container and tell your instructor what the directions told you about getting the surface ready for painting.		

JOB STEPS

1. Take all equipment/materials to the work area.

2. Lay dropcloth on floor and put caution signs in proper places.



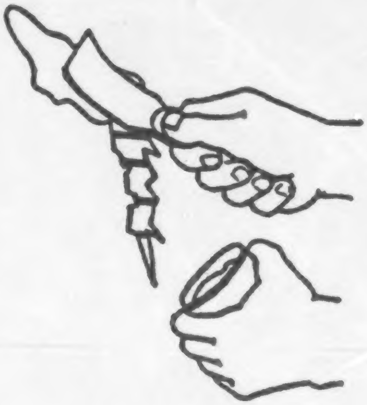
3. Be sure the area is well ventilated.

4. Check ladder safety and place in position.

5. Scrape and sand any cracked surfaces.

JOB STEPS

6. Large cracks should be filled with wood filler. After drying, the filler should be sanded smooth.

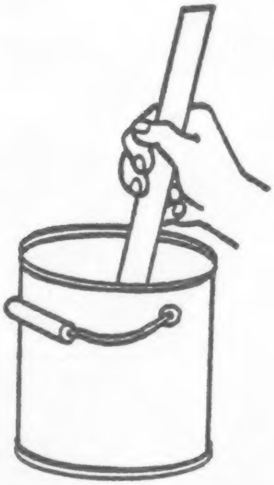


7. If painting on metal, be sure to clean and paint with the grain. When cleaning metal, use steel-wool, scraper or sandpaper.

8. Then damp wipe dust particles until area is clean.

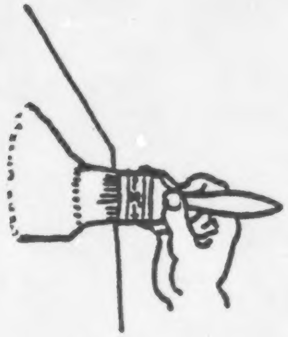
9. If surface has never been painted, be sure to use the right primer. Primer should always be applied before doing any filling in of putty or other materials. You apply one coat of primer.

10. Stir paint to be sure it is properly mixed.



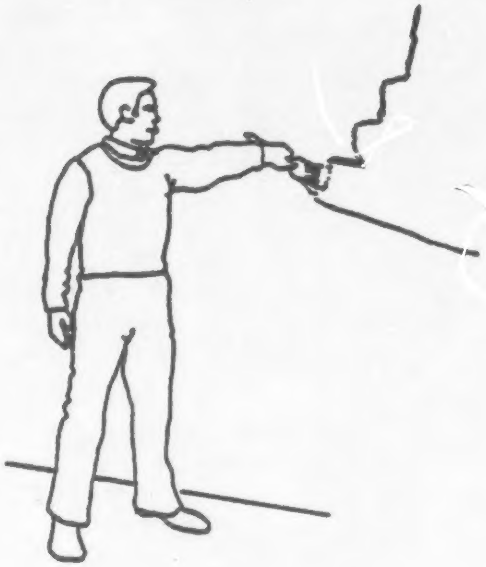
JOB STEPS

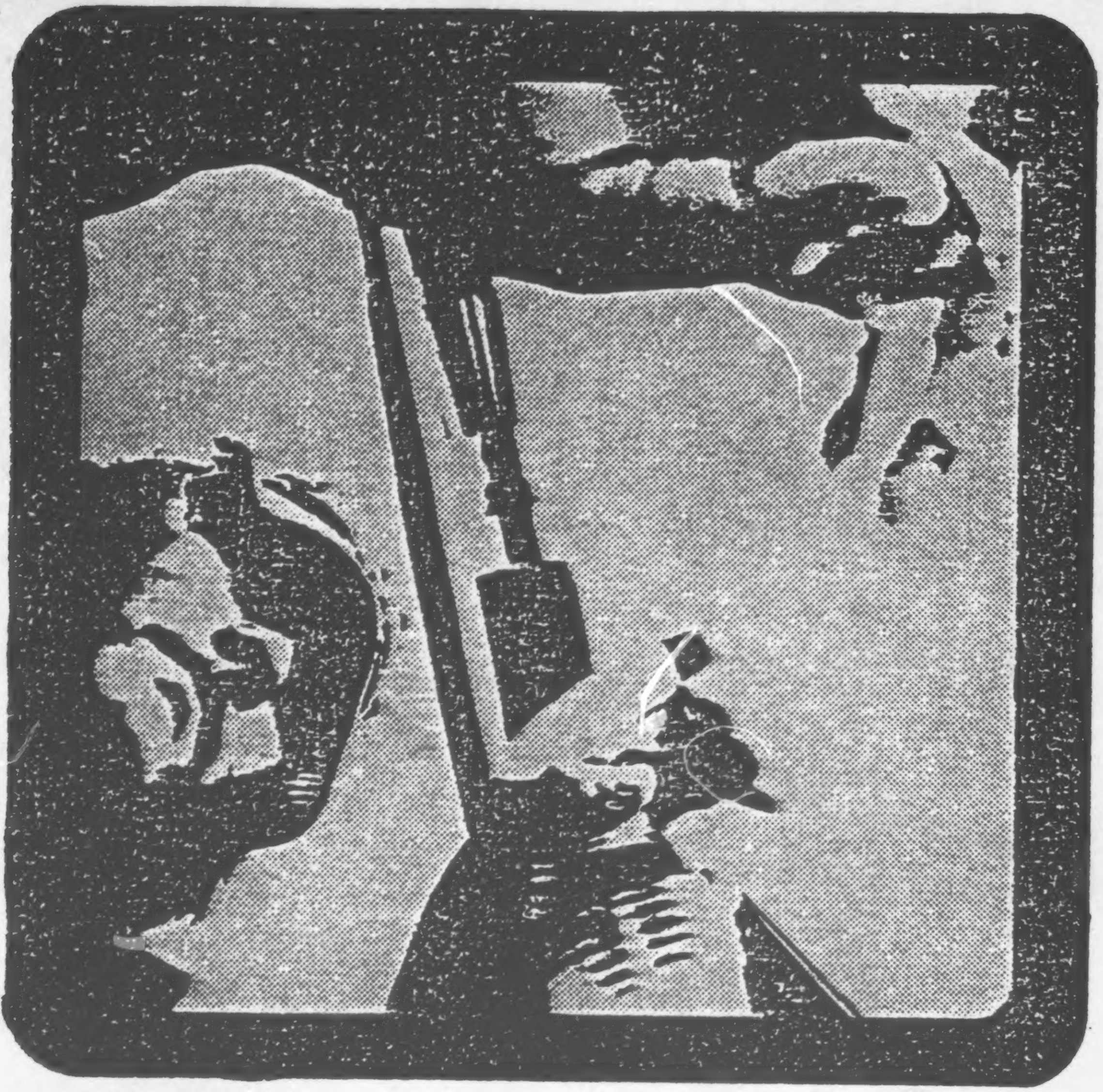
11. Now apply the paint to the surface you prepared. The distance of your strokes should be adjusted to your comfort. The brushing should be feathered into the area you just finished.



12. Do not apply too heavy or light of a coat. Apply an even coat to properly cover the area.

13. Continue painting until area is completely painted.





building maintenance & engineering

unit: General Maintenance

capital area career center

module: 2201 02 013 date: 2/77 level:

skill title: Repairing Dripping Faucet

developed & written by: Douglas Barker

visuals by: Dave Wehrwein

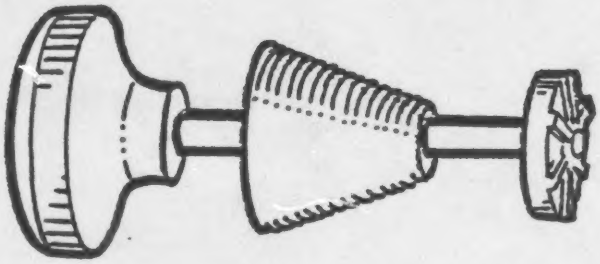
PERFORMANCE OBJECTIVE

You are going to learn:

How to repair a leaky faucet.

In order to do this you will need:

seat dressing tool



screwdriver (philips & flat head)	adjustable wrench
jack knife	replacement gasket
asbestos wick	

We will know you can do it when:

The faucet you have repaired no longer leaks and works easily.

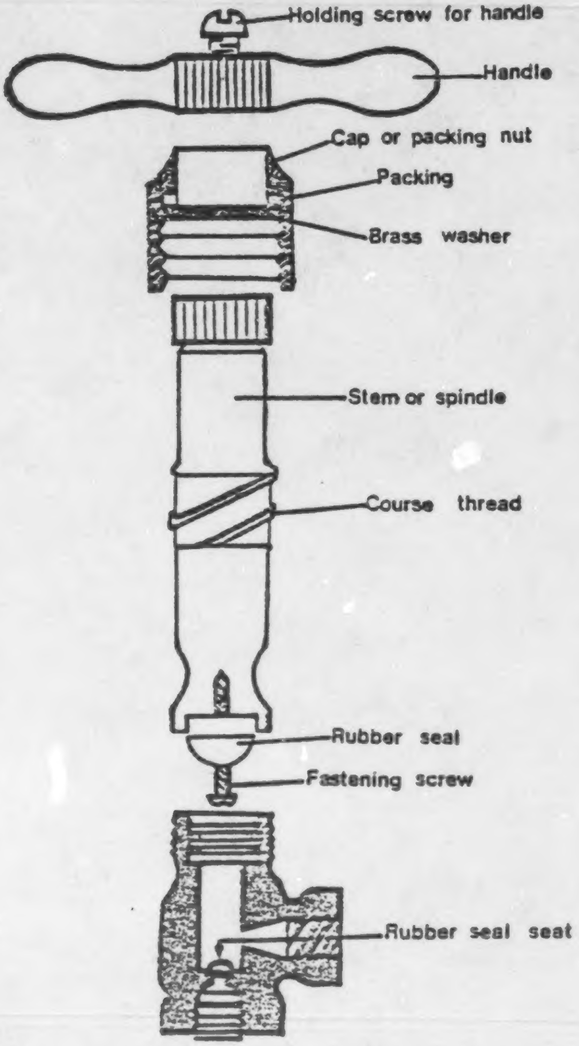
INFORMATION

A. Know all parts of the diagram.

B. Refer to diagram of valve with each step.

C. Know all definitions of words.

D. Go to the lab and practice break down and assembly of faucet and valve by following the job steps.


Holding screw for handle
Handle
Cap or packing nut
Packing
Brass washer
Stem or spindle
Course thread
Rubber seal
Fastening screw
Rubber seal seat

WORD GUIDE

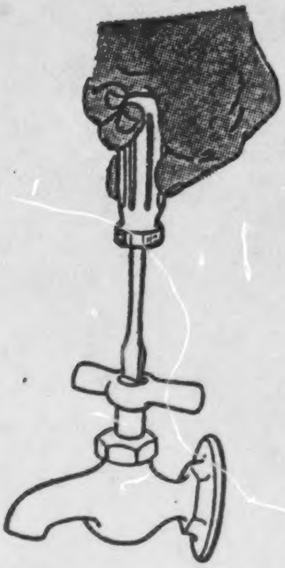
SUPPLY VALVE - Valve which controls flow of water throughout water supply system-usually located at water meter or water pump.

PRESSURE - The applying of force to something, by something else, in direct contact with it.

FAUCET - Water supply valve located at fixtures, such as sinks, lavatories, and tubs.

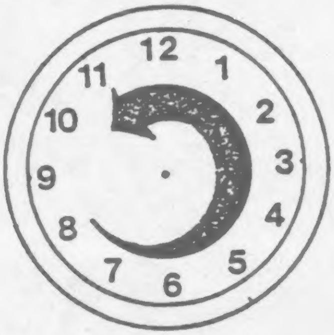
JOB STEPS

1. Get all materials and tools you will need.
2. Shut off supply valve closest to faucet to be worked on.
3. Open valve to be worked on to relieve pressure.
4. Using screwdriver, remove screw on top of the handle.



WORD GUIDE

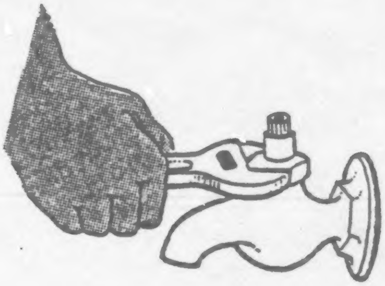
COUNTER-CLOCKWISE -



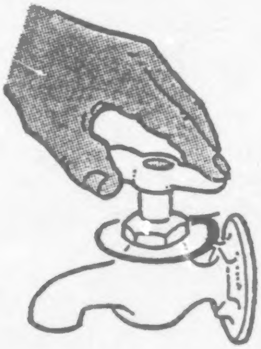
JOB STEPS

5. Remove the handle.

6. Using an adjustable wrench, remove cap or packing nut.



7. To remove stem or spindle, set handle on stem and turn counter-clockwise, stem will come out.

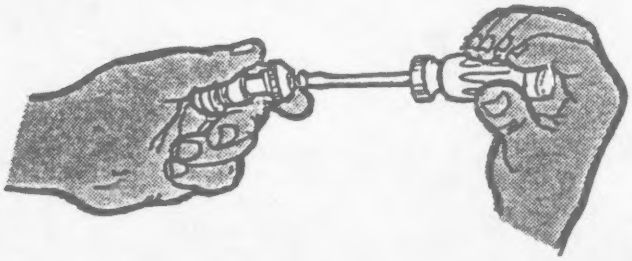


WORD GUIDE

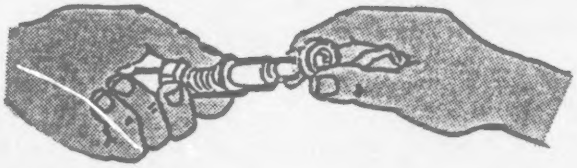
WASHER - A flat thin ring or a perforated plate used in joints or assemblies to ensure tightness and prevent leakage.

JOB STEPS

8. Using screwdriver, remove screw located at bottom of stem holding rubber washer.



9. Remove rubber washer.



WORD GUIDE

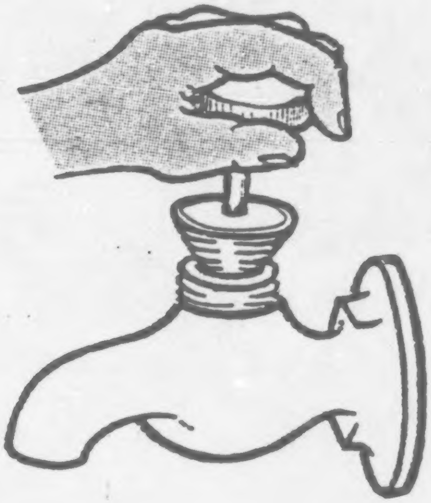
CORROSION - Rust or other chemical reaction that eats away metal.

SEAT DRESSING TOOL - Flat toothed cutting tool.

JOB STEPS

10. Visually check valve seat, if corrosion has collected, gently remove with knife.

11. If it is gouged or severely damaged, insert seat dressing tool from top of valve body and place on seat.

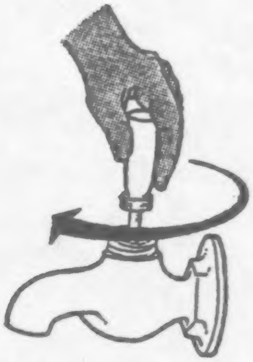


WORD GUIDE

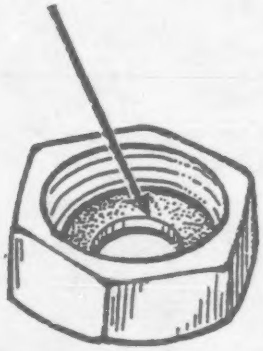
CLOCKWISE - The direction in which the hands of a clock rotate as viewed from in front.

JOB STEPS

12. Turn tool clockwise with light to medium pressure. Make many complete turns.



13. Remove tool and check seat for smoothness. Repeat operation until seat has no gauges.

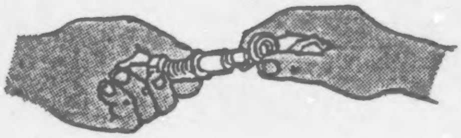


WORD GUIDE

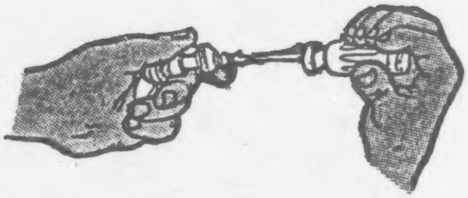
GASKET - Packing for the purpose of making pipe or other joints fluid-tight (such as rubber, asbestos, or metal).

JOB STEPS

14. Choose proper size gasket and install with flat side to the stem.



15. Replace screw at the bottom of stem.

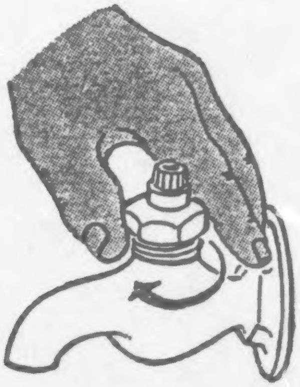


WORD GUIDE

ASBESTOS WICK - Long flexible fibers loosely twisted together leak proofing material.

JOB STEPS

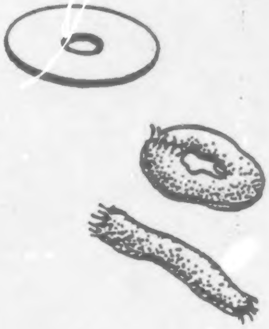
16. Put stem into valve body.



17. Screw it in with a clockwise direction.

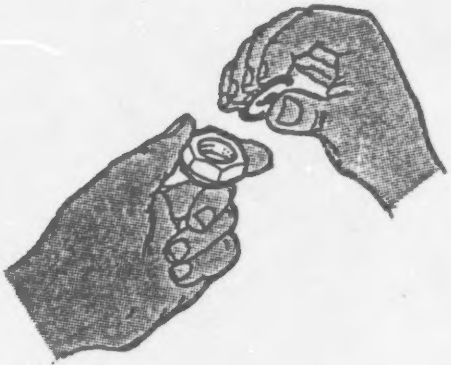
    NOTE: If water escapes around stem, above packing nut, replace packing. (See step 18).

18. Install new packing washer into packing nut. If packing washer is unavailable, a stranded asbestos wick can be wrapped around stem.



JOB STEPS

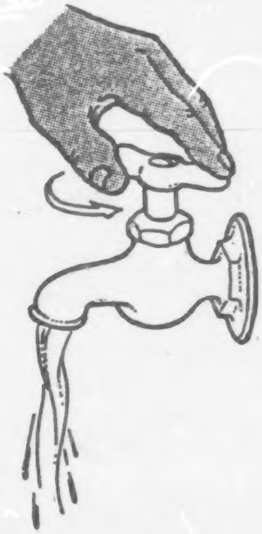
19. Replace brass washer after you have removed any corrosion from it.



20. Screw the packing nut onto the valve body in a clockwise direction. Tighten, but do not force on too hard.

21. Replace handle and screw.

22. Open faucet all the way.



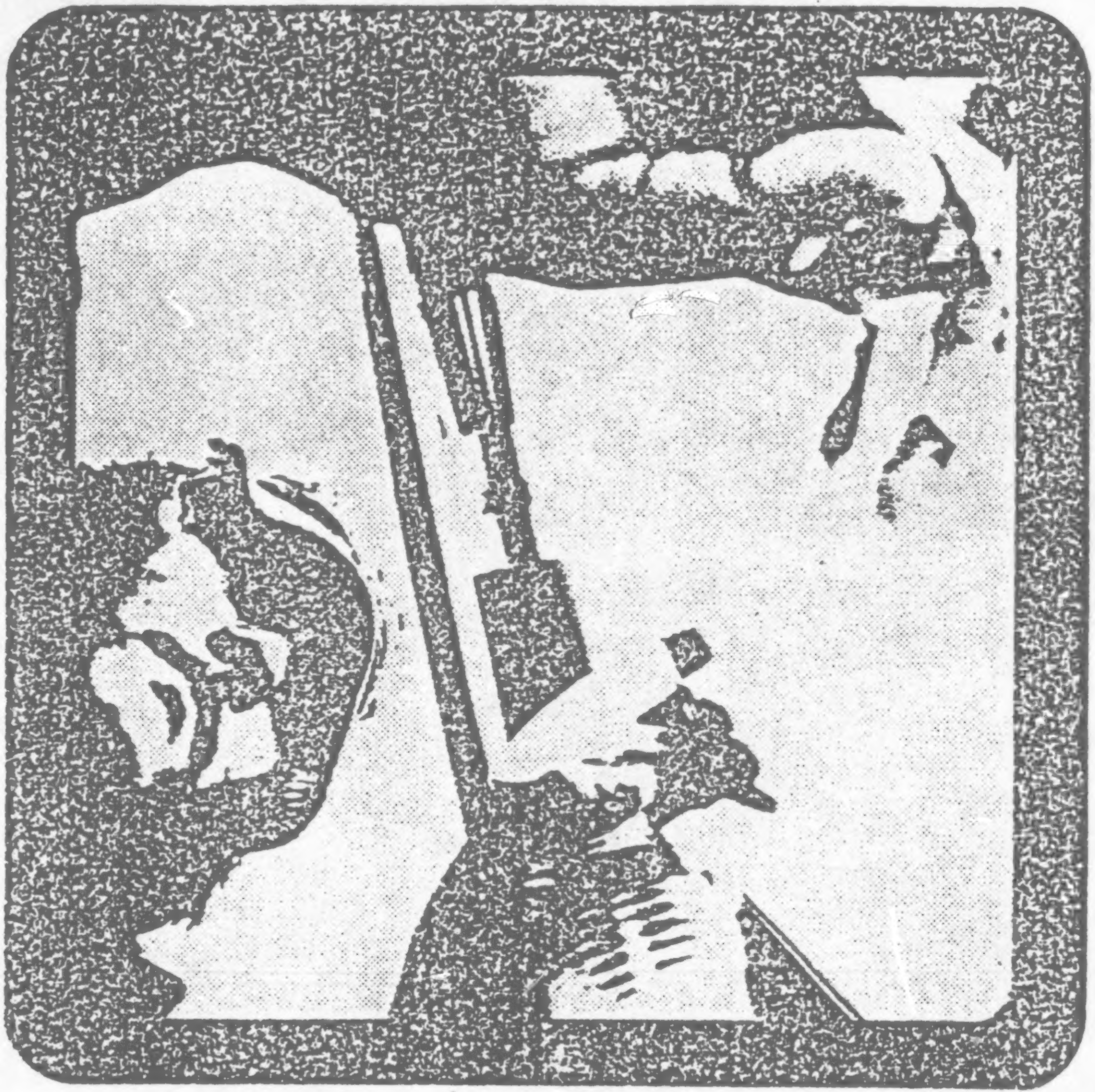
JOB STEPS

23. Slowly open supply valve halfway.

24. After you have let water run until all air is out of line, close faucet and inspect for complete shut-off or leakage around stem at the top of packing nut.

25. If the faucet does not drip or leak, the supply valve should be opened all the way.

26. If there is dripping or leaking, redo all steps. If it will not stop leaking or dripping the faucet should be replaced.



building maintenance & engineering

unit: Plumbing Repair

capital area career center

module: 2201 02 014R date: 2-02-77 level:

skill title: Clearing Clogged Drains and Traps

developed & written by: Douglas Barker

visuals by: Dave Wehrwein

WORD GUIDE

OBSTRUCTION - Something blocking water flow.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

How to clean clogged trap and drain lines.

AND IN ORDER TO DO THIS YOU WILL NEED:

Rubber Plunger

Pipe Wrench

Sewer Tape

Drop Cloth

Drip Pan

Clean Rags

WE WILL KNOW YOU CAN DO IT WHEN:

The drain and trap you have cleaned is clear of all obstruction, (clogs) and water flows freely.

WORD GUIDE

RUBBER PLUNGER - Hollow, curved rubber (molded) with a handle about 30 inches long.

OVERFLOW DRAIN - Opening near top of sink to prevent over flowing on floor.

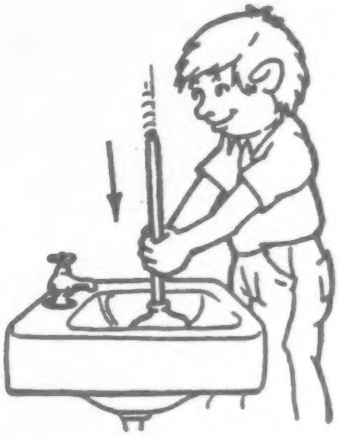
FORCE - A pushing power or strength.

JOB STEPS

1. If water flows slowly through drain, use a rubber plunger. Collect your materials and take them to your work area.

2. First cover the over-flow drain with one hand to contain pressure in the drain.

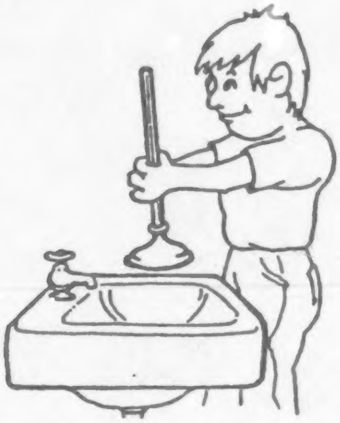
3. Place the rubber plunger over the sink drain and push down on the handle as far as possible. This forces the obstruction or clog down the drain.



LIQUID DRAIN CLEANER - Chemicals in liquid or crystal form, which when poured into lightly plugged drain will loosen and force obstruction (clogs) out of drain piping.

JOB STEPS

4. Slowly pull upward on the handle far enough to release the suction and separate the plunger from the sink. If you pull the plunger too rapidly, you will splash the walls.



5. Repeat steps 2 through 4 five times and test by running tap water into the drain.

6. If water flows freely, add liquid drain cleaner. Be sure to follow the directions on the cleaner.

7. If water does not flow freely, repeat steps 2, 3, 4 and 5.

8. If steps 1 through 7 fail to do the job, proceed with the next steps.

DROP CLOTH - A cloth with water proof coating.

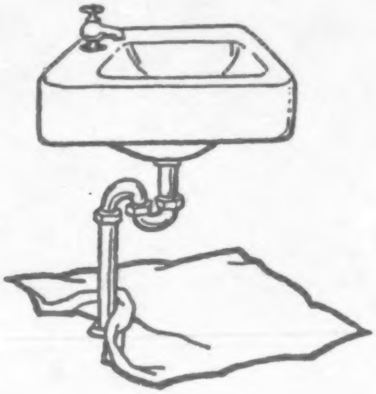
DRAIN TRAP - A downward/upward loop in the drain pipe to catch heavy pieces.

DRIP PAN - Any shallow depth pan, pail or can.

PIPE WRENCH - Adjustable wrench with jaws that have rather deep grooves for gripping.

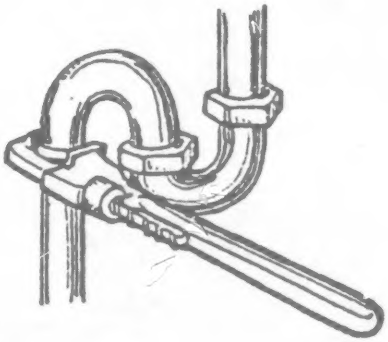
JOB STEPS

9. Place a drop cloth under the drain trap on the floor. The trap is directly under the sink.



10. Place a drip pan under the trap on the drop cloth.

11. Using pipe wrench, loosen the upper and lower pipe nuts. Be careful not to scratch the chrome plating.

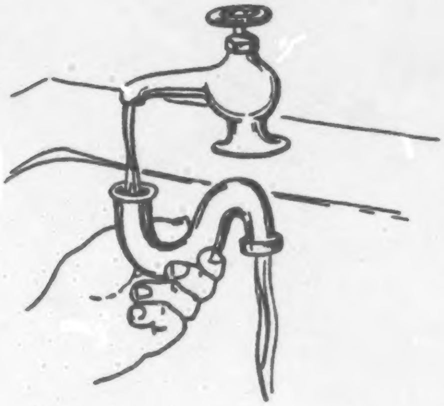


WORD GUIDE

PLUMBER'S SNAKE - A flexible steel coil with a pointed end and a length of 25 or 50 feet.

JOB STEPS

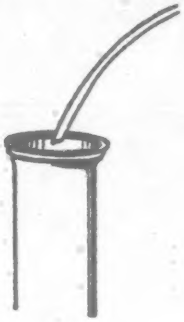
12. Remove trap from pipes and check trap for clogging.



13. Clean trap and rinse with water.

14. Using a flashlight, check pipe for any build up of crusted material.

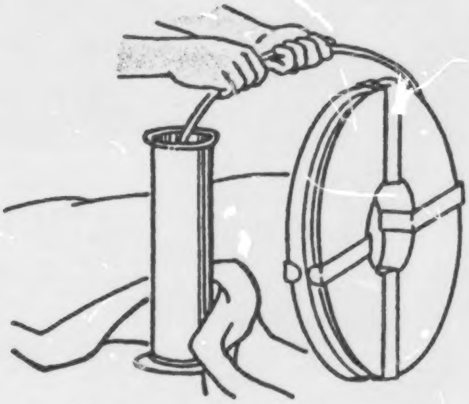
15. With the plumber's snake, insert the end of flexible steel into the pipe opening leading to the drain.



JOB STEPS

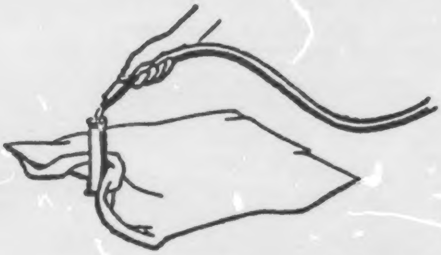
16. Using the push and pull method, work the snake into the pipe far enough to reach the down pipe leading to the main drain.

    NOTE: Snake will be rather hard to force in pipe as it meets joints or clogs.

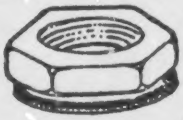


17. When snake goes in easy, work it back out with same push and pull movement.

18. If a hose is handy, water can be used to flush the line.

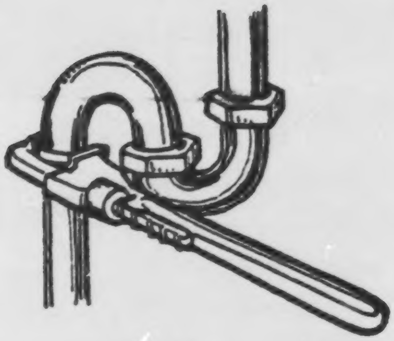


19. Before replacing the trap, check rubber gaskets under chrome nuts, and change if necessary.



JOB STEPS

20. Replace the trap into the drain line and tighten nuts.

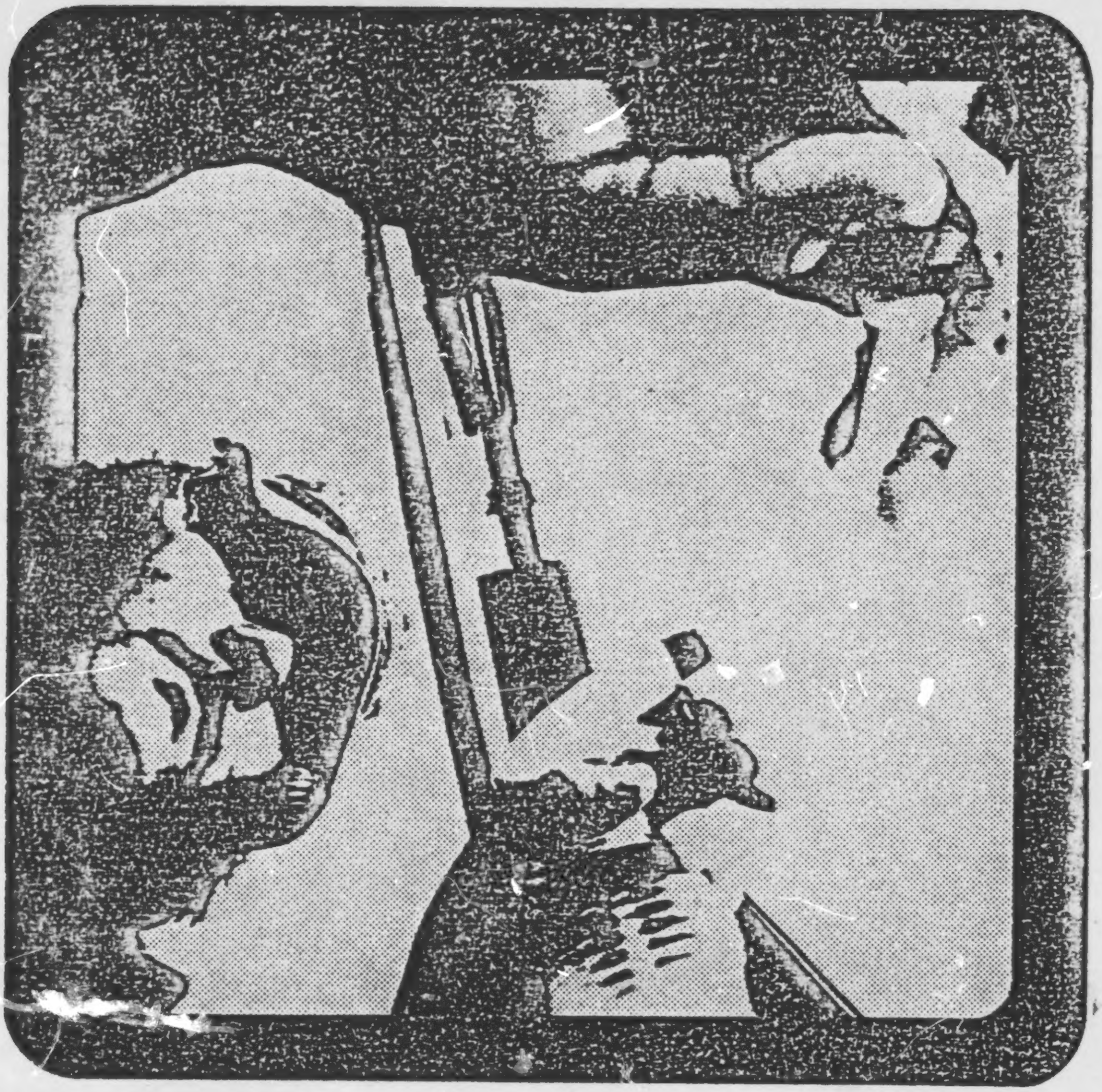


21. Run water through the line and check for leaks.

22. Place drain solution into drain according to directions. Remove covering from overflow.

23. If this does not make water flow freely, call a plumber.

24. Clean and put away all equipment.



building maintenance & engineering

unit: Building Maintenance-Lamp Replacement

capital area career center

module: 2201 02 015 date: 1/22/77 level:

skill title: Fire equipment-Extinguishers

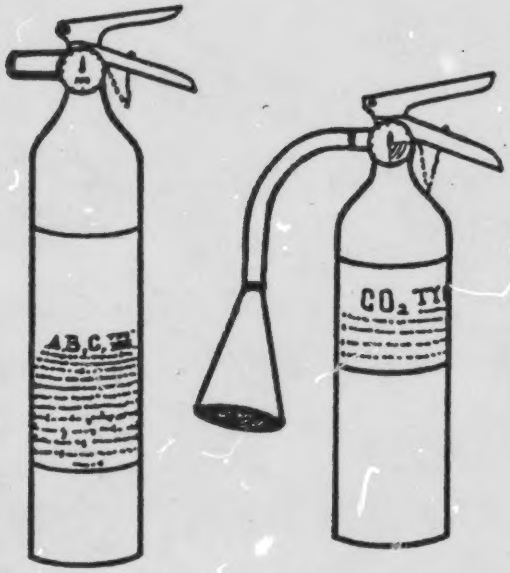
developed & written by: Daniel M. Woodward

visuals by:

WORD GUIDE

CLASS - Kind of fire to be used on A B or C.

WIRE SEAL - Around trigger. It is broken when fire extinguisher is used.



PERFORMANCE OBJECTIVE

You Are Going To Learn:

How to use and check different types of fire extinguishers.

And In Order To Do This You Will Need:

CO_2 type II fire extinguisher.

Dry chemical type III fire extinguisher.

Monthly checklist.

Fire classes and extinguisher test.

We Will Know You Can Do It When:

You have completed the job steps and, by taking a short test, you show what type of extinguisher to use on a certain fire.

INFORMATION	MATERIALS	LOCATION OF MATERIALS

I have looked at fire extinguishers around the building and noticed that they have the letters A B C on them, what does this mean?

> The A B C on the front means that the fire extinguisher will put out only an A B or C fire.

Remember these letters - you could stop a serious fire.

- A - Wood, paper, and cardboard.
- B - Burning liquid, oil, gas, and paint thinner.
- C - Electrical fires - Wires, motors, and fuse boxes.

Firemen made this letter code because people were spraying water on B and C type fires. Water used on B and C type fires only makes things worse.

A CO_2 fire extinguisher is to be used on B and C type fires only. It will not put out wood-paper fires or A type fires.

A Dry chemical fire extinguisher can be used on A B C type fires. So any fire extinguisher with A B or C on the tank can be used on all fires.

I think that I would want to make sure the fire extinguishers will work. How can I tell?

By doing the following each month:

Check each location.
Check the nozzle for plugging.
Check the wire seal for breaks.
Check gauge to see if it's full.

If any of the above are not correct, you should send the extinguisher to a qualified repair man. Do not try to repair or refill the fire extinguisher yourself.

JOB STEPS

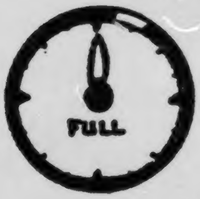
1. Find all fire extinguishers in the building (Monthly checklist).

2. Write down what kind of fire extinguisher is at each area (CO_2, Dry Chemical).

3. Write down class for each A, B, C.

4. Check all wire seals. Send for repairs if they are broken.

5. Check the arrow on each gauge. it should point to full.



6. Complete test sheet correctly.

NAME ______________________________

MONTHLY CHECKLIST

	LOCATION	TYPE	CLASS	CONDITION	ACTION
XAMPLE:	Welding Lab	Dry Chem.	A B C	EMPTY	Send in and replace.

FIRE CLASSES AND EXTINGUISHER TEST

Answer the questions on the answer sheet. Do not write on this test. The answers are on the last page of this module.

1. An extinguisher with the letters A B C can be used on what kinds of fires?

   A. Burning liquids

   B. Wood, paper

   C. Electrical

   D. All of the above are correct

2. An extinguisher with the letters A B C on the tank is what kind of extinguisher?

   A. CO_2

   B. Dry Chemical

   C. Soda Acid

   D. Water ABCA

3. By using an extinguisher quickly and in the correct way a person could stop a _______ .

   A. Death

   B. Great loss of money

   C. Serious fire

   D. All of the above are correct

4. A B fire is what class of fire?

   A. Burning liquid

   B. Wood-paper

   C. Electrical

   D. Burnt wires

5. A C fire is what class of fire?

A. Burning wires

B. Wood-paper

C. Burning electrical motor

D. Both A and C are correct

6. CO_2 fire extinguisher is used to put out ______ fires.

A. A B

B. B C

C. A B C

D. A C

7. We should check fire extinguishers once a ________.

A. Day

B. Week

C. Month

D. Year

8. When checking extinguishers, check the ________.

A. Wire seal

B. Check the gauge

C. Check nozzle for plugs

D. All the above are correct

9. If a fire extinguisher has a broken wire seal, what should you do?

A. Test it

B. Try to fix wire

C. Send it in for repair

D. Shake it

2-15

10. We really don't have to know what type of extinguisher we are using if we know that extinguishers are marked with ________ to show us what to use it on.

A. A D E

B. A B

C. A or B or C or all

D. B C

ANSWER SHEET

1. ____

2. ____

3. ____

4. ____

5. ____

6. ____

7. ____

8. ____

9. ____

10. ____

KEY

1. D

2. B

3. D

4. A

5. D

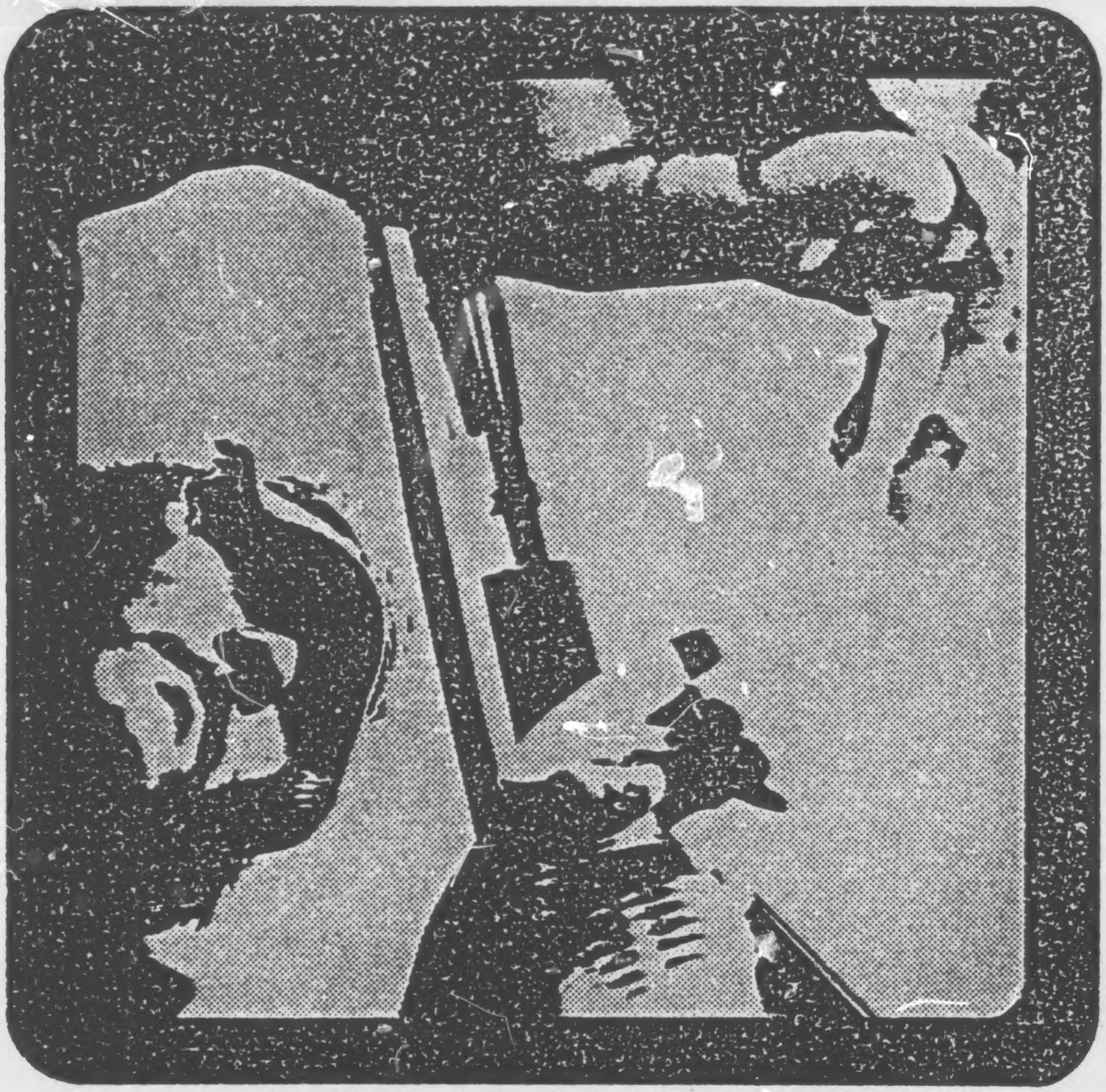
6. B

7. C

8. D

9. C

10. C



building maintenance & engineering

unit: General Maintenance

capital area career center

module: 2201 02 016R date: 2/7/77 level:

skill title: Repair of Blistered and Cracked Gravel and Tar Type Roof

developed & written by: Doug Barker

visuals by: Mary Ann Gamel

PERFORMANCE OBJECTIVE

You Are Going To Learn:

How to repair blisters and surface breaks in a flat tar and gravel roof.

And In Order To Do This You Will Need:

EQUIPMENT

- Heavy bristled broom
- 2 Roofing trowels (with square end)
- Box cutter
- Hammer
- Chisel
- Knife or Shears
- Rags
- Ruler
- Mineral Spirits

MATERIAL

- Tar base mastic
- Light gunny sack
- Pea stone gravel

We Will Know You Can Do It When:

The roof area you have repaired has no blisters and does not leak.

INFORMATION

You Need To Read:

Building and Plant Maintenance, Page 294

You Need To:

Know diagram of roof (all parts).

Know all definitions.

WORD GUIDE

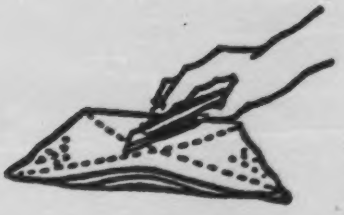
DEBRIS - Scattered rocks, stones, and sticks.

BLISTERED - An enclosed raised spot containing watery liquid.

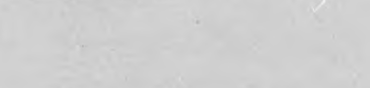
JOB STEPS

1. Sweep and clean all dirt, dust, and debris from the area to be repaired.

2. Using "Box Cutter", cut an "X" in blistered area only.



3. Cut gunney sack with scissors, at 4 inches larger on all sides, than "X" you made in roof with box cutter.



WORD GUIDE

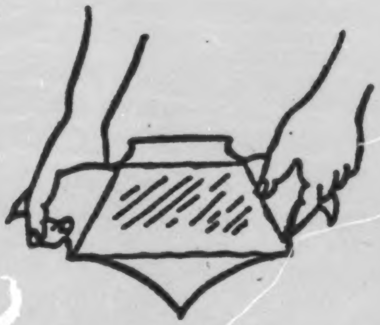
SEGMENTS - Sections.

ROOF MAT - 3 or 4 plys of 15# felt, in between plys and on all outside portions coated with thin coat of hot tar.

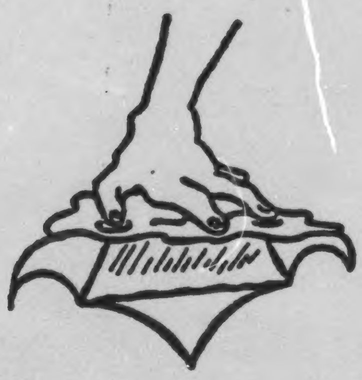
MOISTURE - Liquid condensed in a small area.

JOB STEPS

4. Fold back four segments of "X" which you cut. Use caution not to break roof mat when folding roof mat back.



5. With "rags" wipe dry any moisture in the area.



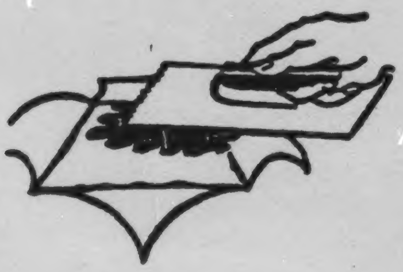
WORD GUIDE

TAR - Black, sticky liquid.

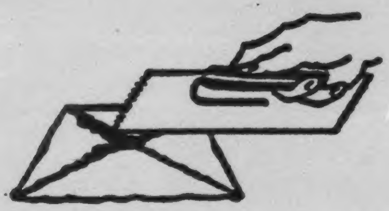
MASTIC - Materials used as protective coatings.

JOB STEPS

6. With "trowel" apply lots of Tar Base Mastic to roof mat before folding four segments back into place.

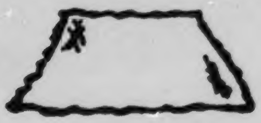


7. With trowel apply more mastic on top of folds.

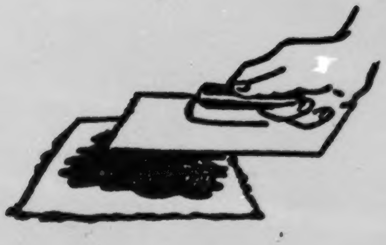


JOB STEPS

8. Place gunney sack into mastic, pressing it firmly.



9. Once more with trowel apply lots of mastic to the top of the gunney sack.

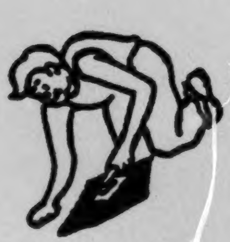


WORD GUIDE

MINERAL SPIRITS -	Various natural substances in liquid form, obtained for man's use. Usually taken from the ground.

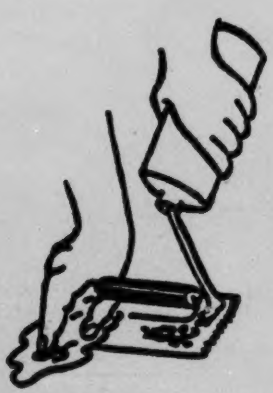
JOB STEPS

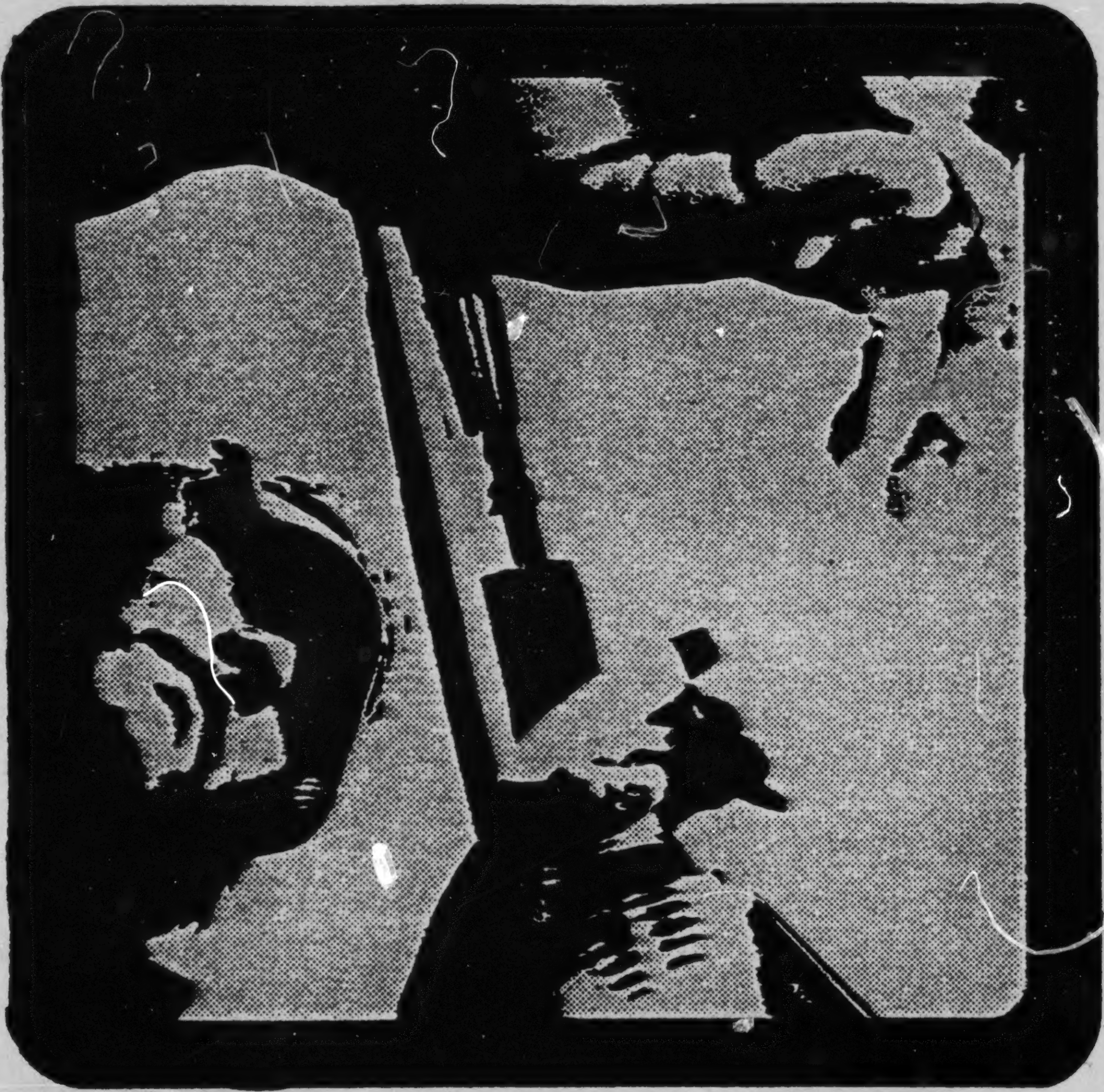
10. With the second trowel, smooth out the area so all parts look the same.



11. Surface breaks (cracks) shall be done the same as above except that no cuts with box cutter are needed.

12. Use mineral spirits to clean trowels. Then wipe dry with a rag.





building maintenance & engineering

unit: General Maintenance

capital area career center

module: 2201 02 017 **date:** 1/23/77 **level:** I

skill title: Cleaning Aluminum Surfaces

developed & written by: Daniel M. Woodward

visuals by: Bill Draper

WORD GUIDE

ALUMINUM - A light colored metal used for trim on buildings.

DISCOLOR - Have a cloudy look.

CIRCULAR MOTION - If you wipe the metal by going 'round 'n 'round, you're wiping with a circular motion.

PERFORMANCE OBJECTIVE

You Are Going To Learn:

How to clean and wax an aluminum surface.

And In Order To Do This You Will Need:

- Pails - 2
- Sponges - 2
- Mild All-Purpose Soap
- Step Ladder
- Wiping Cloth
- Liquid Wax

We Will Know You Can Do It When:

You have completed the job steps and the aluminum is free of dirt and stains.

INFORMATION

I was told that aluminum does not rust. Why do we have to clean it?

You're right, aluminum does not rust, but it does get dirty. Dust and smoke fumes build up on the surface and tend to discolor the aluminum.

Where in a building would I be likely to find some aluminum trim?

On the doors, around windows, grills, and handrails.

Can I ruin aluminum?

Yes. You can ruin aluminum by scratching it. Therefore, when you apply cleaner or wax, and when you wipe or buff, always rub in the direction of the finish. Never rub with a circular motion.

ANSWER THE FOLLOWING QUESTION:

When cleaning aluminum, you should rub:

a. any way you like.

b. not at all.

c. in the direction of the finish.

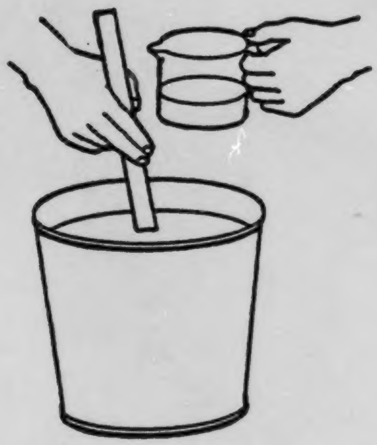
d. with a circular motion.

If you chose "c", you are correct.

JOB STEPS

1. Fill both pails with warm water.

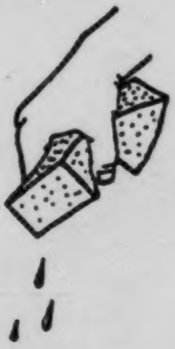
2. Mix 1/3 of a cup of soap into one of the pails.



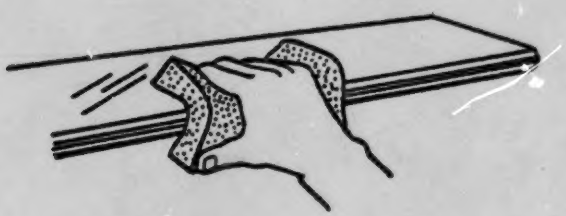
3. Put a sponge in each pail.

4. Pick up rags, pails, and liquid wax and go to area to be cleaned.

5. Squeeze the soapy sponge, just a little.



6. Using the soapy sponge, go back and forth and clean the aluminum.



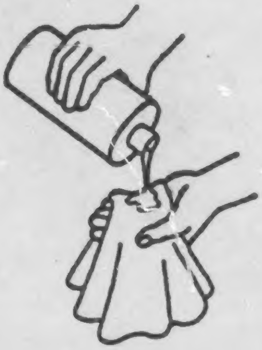
7. Put the soapy sponge back in the soapy water.

8. Squeeze out the clean water sponge and use it to rinse the aluminum. Wipe back and forth.

9. Quickly dry the aluminum with your rag. Wipe back and forth.

10. Does it look clean? Are there spots, streaks, or discolored areas? If it is not clean, do job steps, 5,6,7,8, and 9 again.

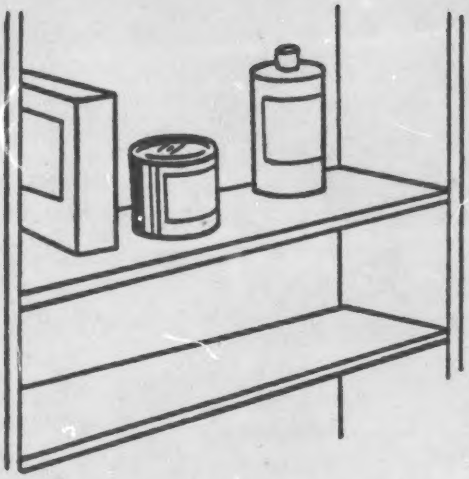
11. Take a small rag and pour a little liquid wax onto it.

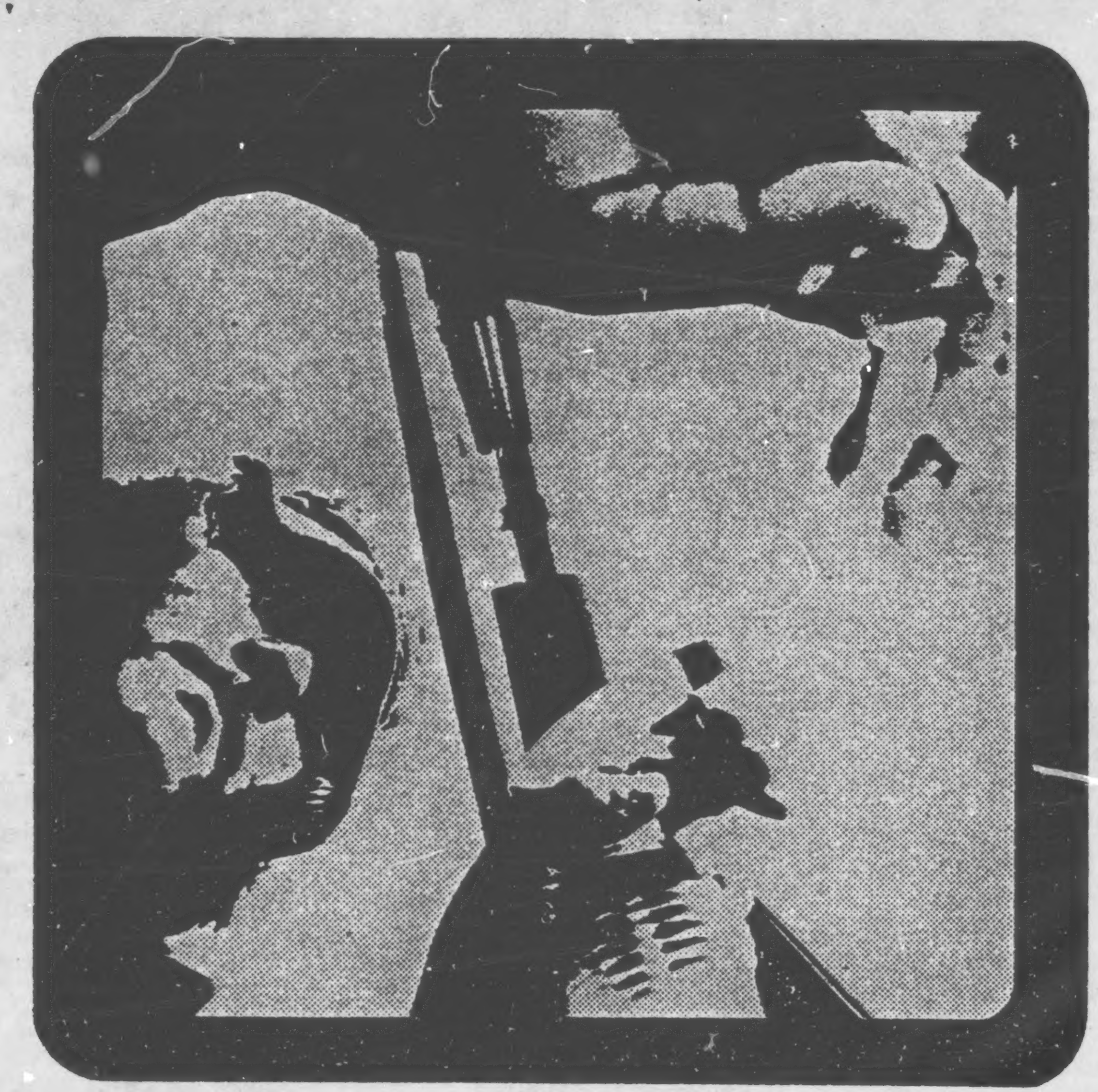


12. Put a thin (no drips) coat of wax on the aluminum after it is clean.

13. Make sure the caps are tight on the soap and wax.

14. Put all tools away.





building maintenance & engineering

unit: Maintenance

capital area career center

module: 2201 02 018 date: 1-25-77 level:

skill title: Replace Broken Floor Tile

developed & written by: Daniel M. Woodward

visuals by: Sherri Baker

WORD GUIDE

PROPANE TORCH - Small hand torch.

APPLIED - Put on.

PERFORMANCE OBJECTIVE

You Are Going To Learn:

How to remove and replace a floor tile.

And In Order To Do This You Will Need:

- Propane torch
- Putty knife
- Tile
- Cement (Tile)
- 4-Asbestos Strips (4" x 12")
- 1" Paint brush
- Paper towel
- Striker
- A heavy, old book.
- Pail-water

We Will Know You Can Do It When:

You have removed the old tile and replaced it with a new tile so that the new tile fits the floor pattern, and no tile cement shows.

INFORMATION

Is it hard to replace broken tile?

No - it is simple. The biggest problem is trying to match the old tile in shade and color with a new tile.

You may want to look in some storage areas in your building. Most builders order extra tiles and sell them to the owners for replacement.

What is the easiest way to remove the old tile?

It is best to use a propane torch. When the heat is applied, it melts the tile cement.

Can the tile burn?

Yes, you must keep moving the torch. Don't leave it in one spot on the tile.

Now answer this question:

To keep the tile from burning you should keep __________ the propane torch.

A. Lifting

B. Pointing

C. Moving

D. Shuting off

Hope you picked "C".

WORD GUIDE

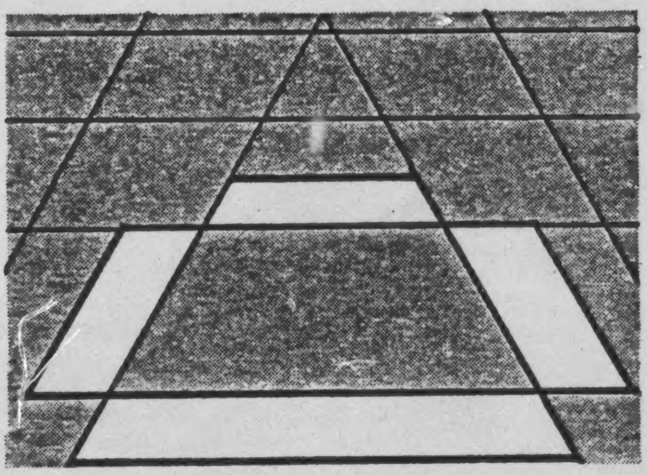
ASBESTOS STRIPS - Thin, fire-resistent paper.

JOB STEPS

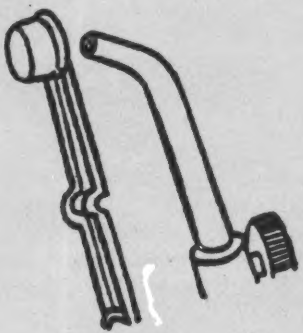
1. Collect your materials and take them to your work area. Fill a pail with water.

2. Put asbestos strips into the pail.

3. Lay asbestos strips around the edge of the tile to be removed.



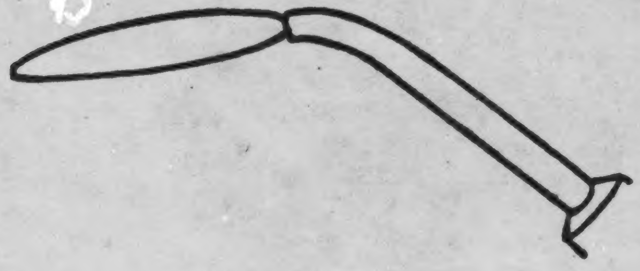
4. Open valve on torch, and quickly light the torch with a striker.



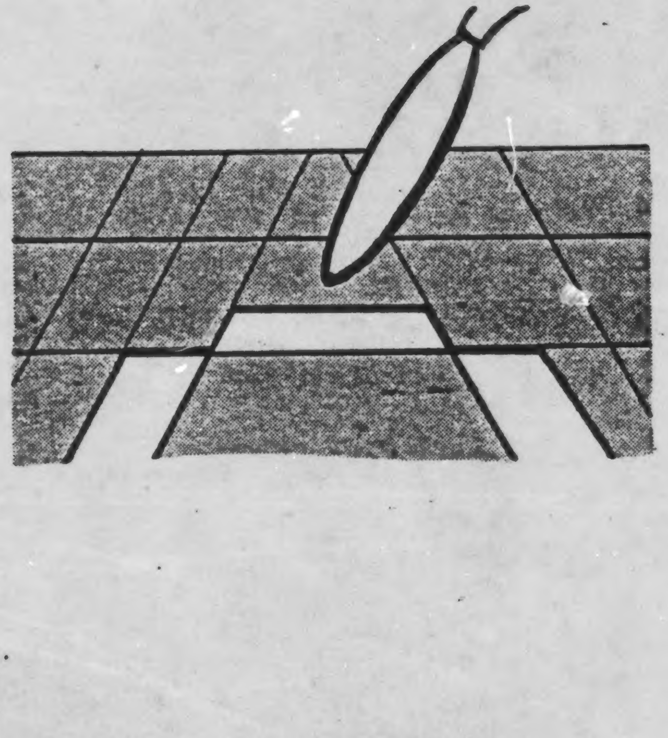
JOB STEPS

CAUTION! Point the flame away from you.

5. Make the flame about 1 1/2 inches long by turning the valve.

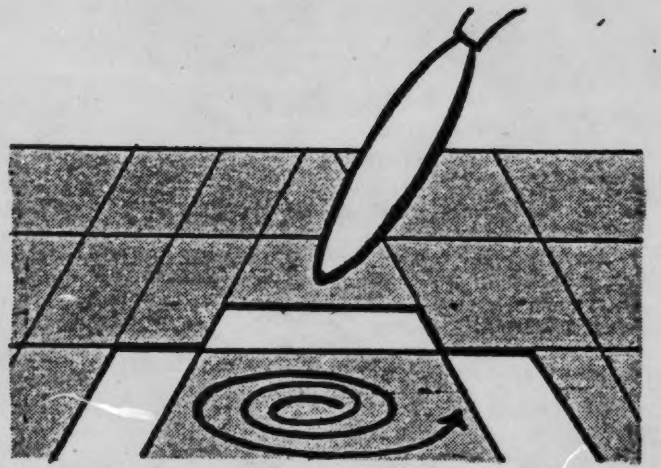


6. Point the torch to the center of the tile. Don't let the flame touch the tile.



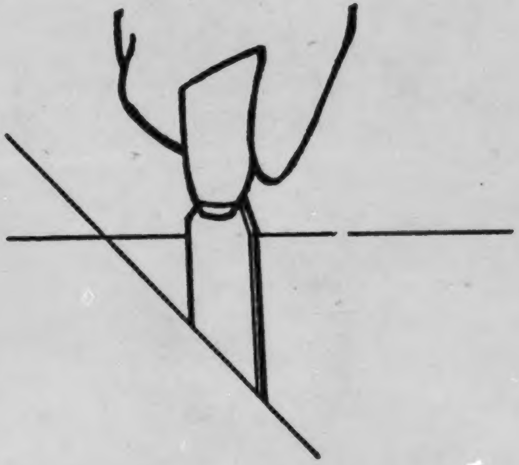
JOB STEPS

7. Move torch around the tile. Start in center and work toward the outside.



8. Keep moving the torch around and around for 2 minutes.

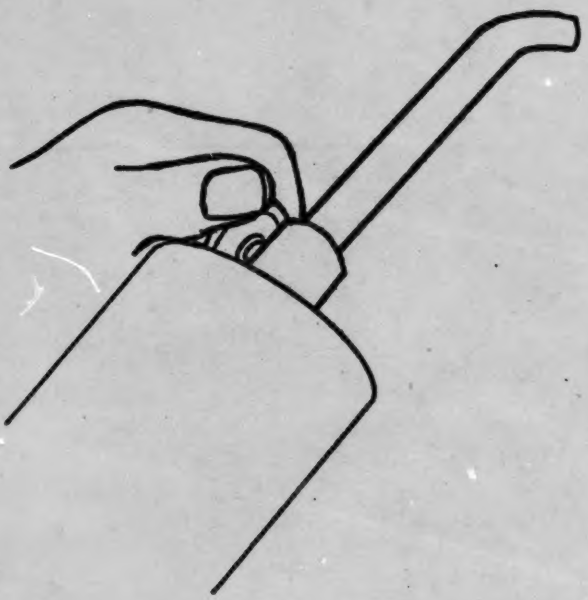
9. Push the blade of a putty knife gently into the crack at the edge of the tile.



JOB STEPS

10. Slowly lift the tile up. If it doesn't come up, do job steps 8, 9, and 10 again.

11. Shut torch off.



12. Remove the tile with a putty knife, scrape off the old tile cement.

13. CAUTION! Don't slip when pushing - this will chip the other tiles.

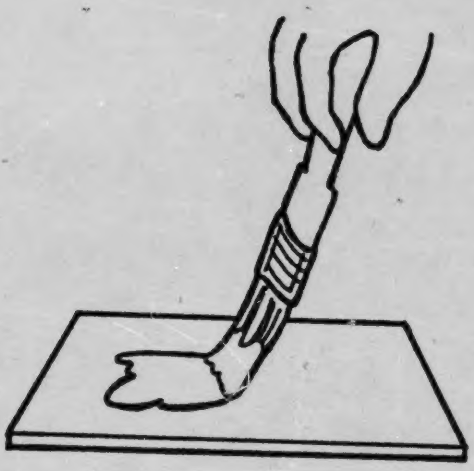
JOB STEPS

14. Clean corners well or the new tile will stick up.

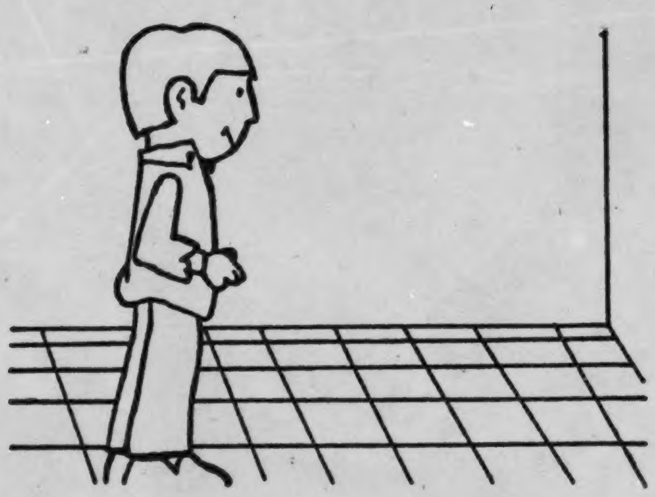
15. Wipe putty knife off.

16. Dip the brush into tile cement can.

17. Brush tile cement onto the bottom of the new tile.

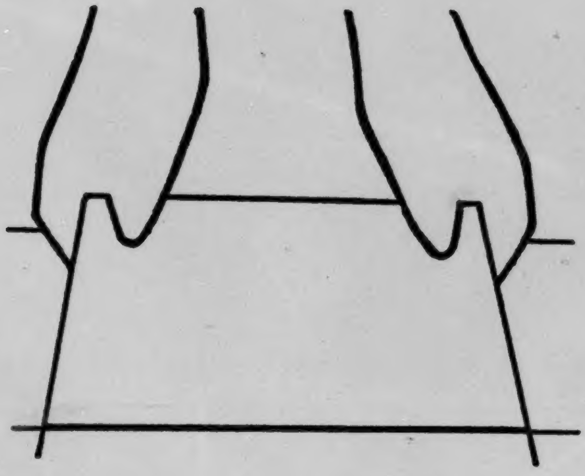


18. Note pattern of tile floor.



JOB STEPS

19. Place the tile down in the correct pattern.

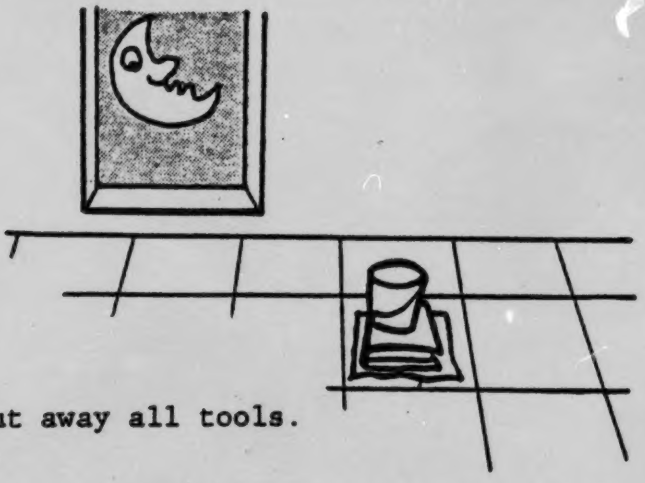


20. With the putty knife and a rag, wipe off any tile cement you can see.

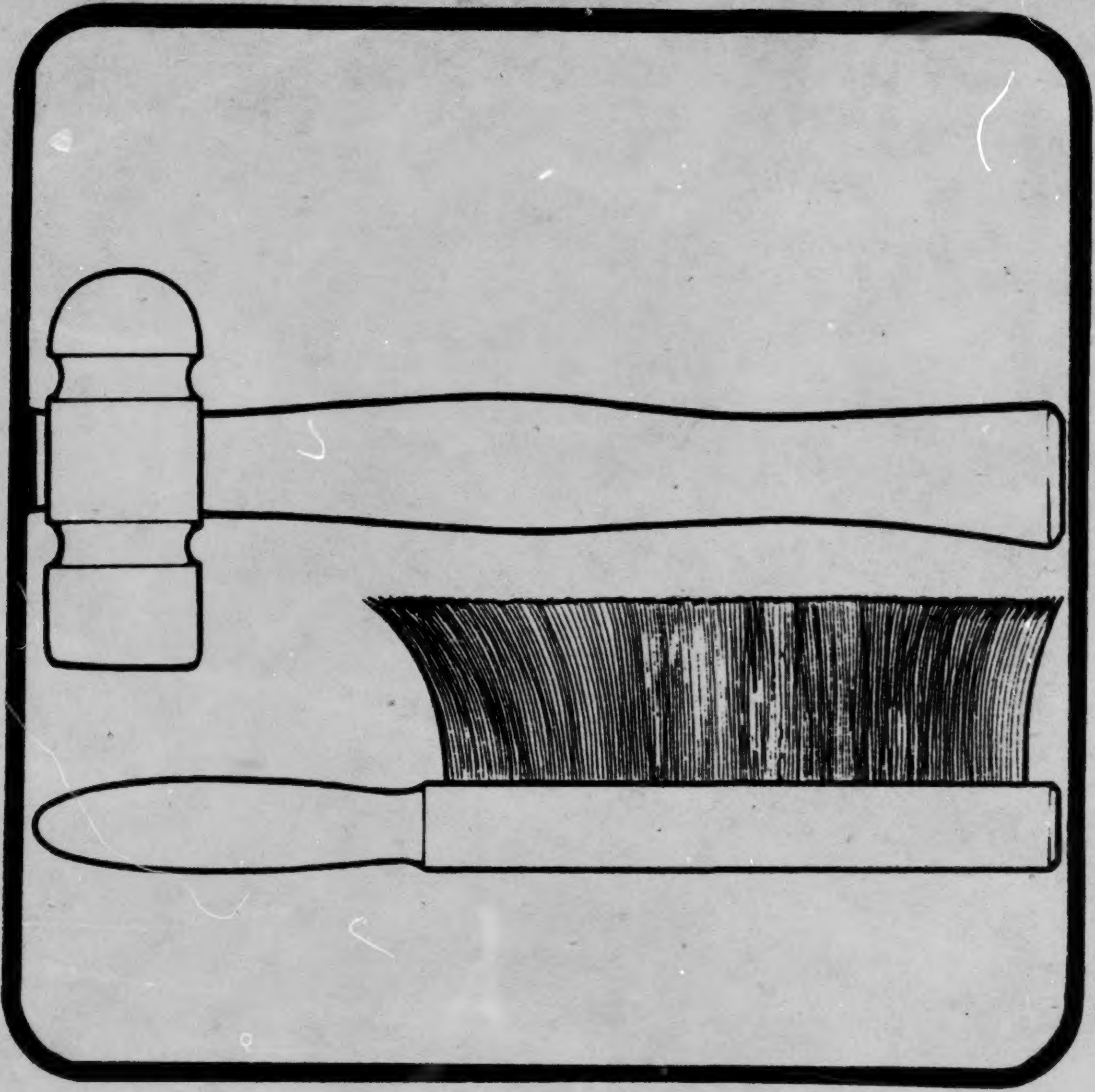
21. Place a paper towel over the tile.

22. Set a book on tile.

23. Set the pail on the book and wait 24 hours before removing paper towel, book and pail.



24. Clean and put away all tools.



building maintenance & engineering

unit: General Maintenance Task

capital area career center

module: 2201 02 019 date: ______ level: ______

skill title: Use of Tubing Cutter (copper)

developed & written by: Douglas Barker

visuals by: Dave Wehrwein

WORD GUIDE

TUBE	Long hollow cylinder (pipe)
BURRS	A rough edge left on metal by a cutting tool.

PERFORMANCE OBJECTIVE

You Are Going To Learn:

How to cut off a one inch piece of tubing.

In Order To Do This You Will Need:

Piece of 1/2 inch copper tubing

Tube cutter

12 inch tape

We Will Know You Can Do It When:

The cut will be one inch in length, have a smooth straight cut and no burrs or rough edges will be left on the tube edge.

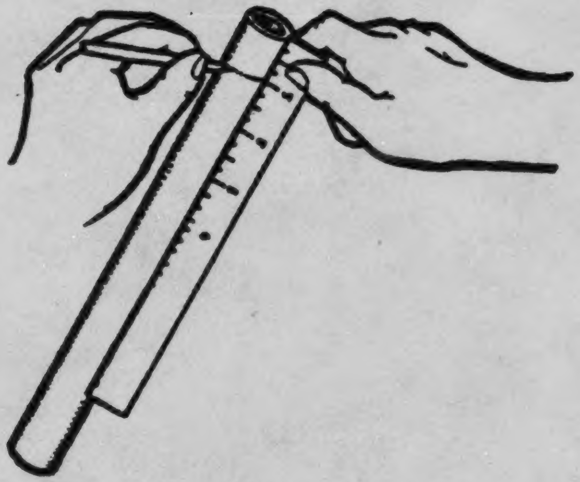
WORD GUIDE

FEED SCREW - Knob at end of tubing cutter which moves cutting wheel in and out.

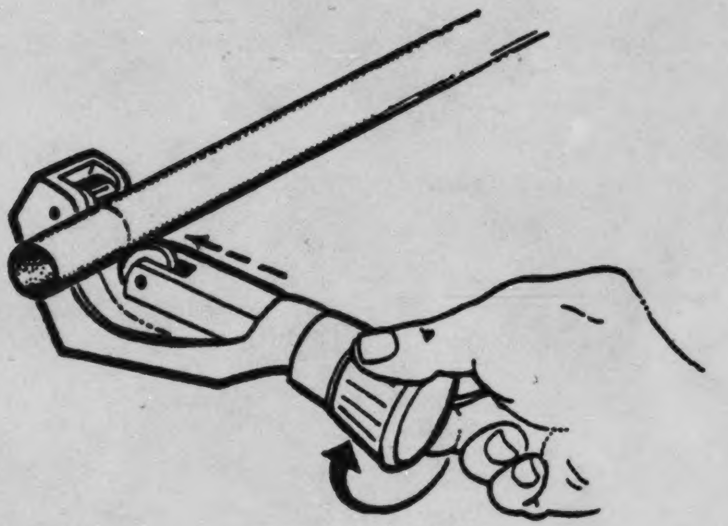
CUTTING WHEEL - Wheel fastened to tubing cutter to cut the tube.

JOB STEPS

1. Measure and mark one inch on the tube.



2. Place tubing in cutter and turn feed screw until cutter wheel rests against mark in tubing.



WORD GUIDE

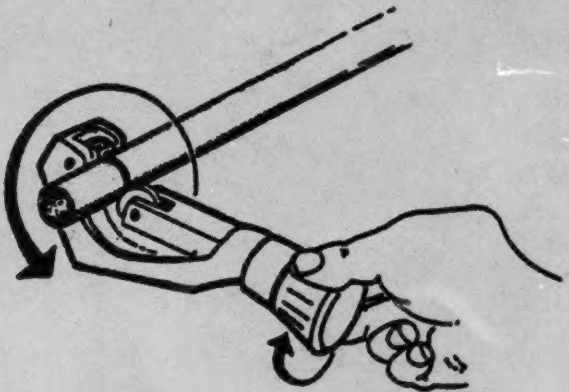
ROTATION - Turning.

CLOCKWISE - The direction in which the hands of a clock move.

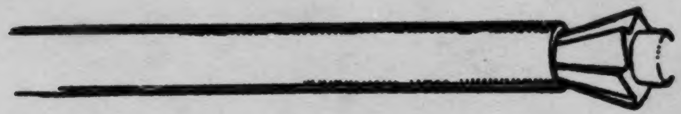
REAMER - Tool for enlarging a hole.

JOB STEPS

3. Rotate cutter around tube turning feed screw 1/4 turn clockwise per each rotation, until tube is cut through.

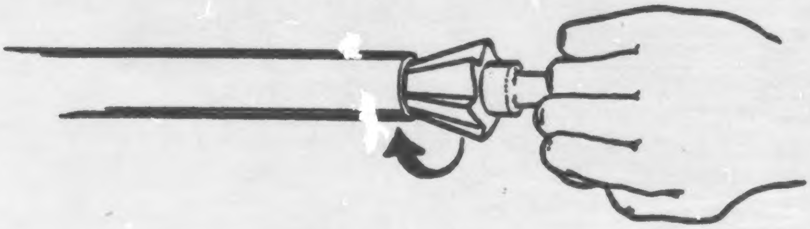


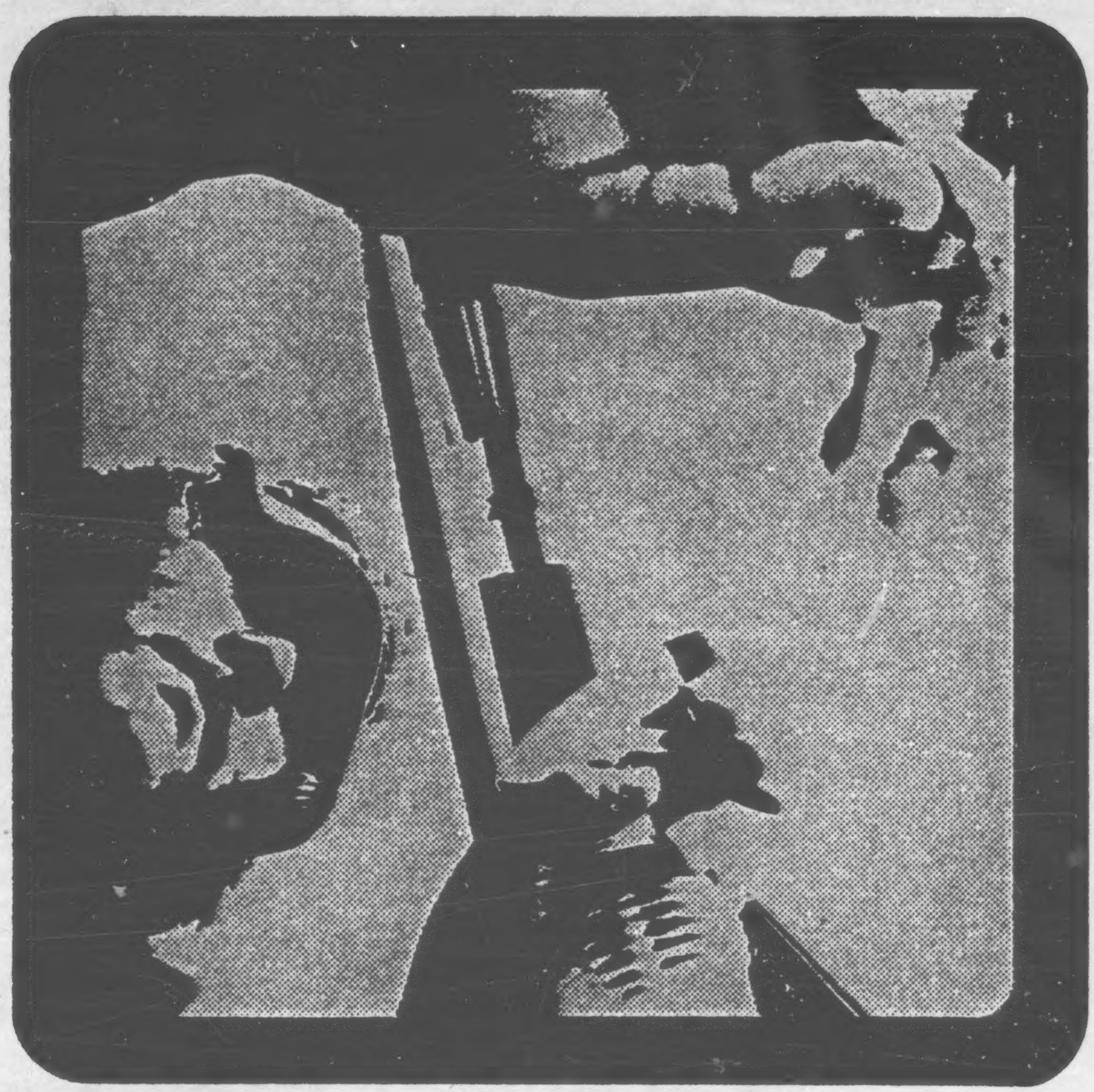
4. Swing reamer blade out 90° and place point in the inside of the tube.



JOB STEPS

5. Turn gently with very little pressure to remove the rough burr's. Do not wedge blade inside of tube.





building maintenance & engineering

unit: General Maintenance

capital area career center

module: 2201 02 020 date: ______ level: ______

skill title: Use of Flaring Tool

developed & written by: Douglas Barker

visuals by: Dave Wehrwein

WORD GUIDE

FLARE - Spread outward

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

How to flare a piece of copper tubing.

AND IN ORDER TO DO THIS YOU WILL NEED:

3/8 inch copper

Tubing flare tool

WE WILL KNOW YOU CAN DO IT WHEN:

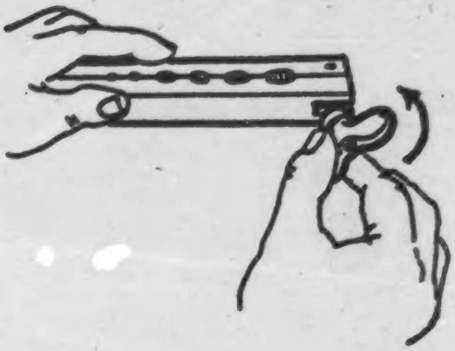
The tubing you have flared has a smooth 45° lip all the way around.

WORD GUIDE

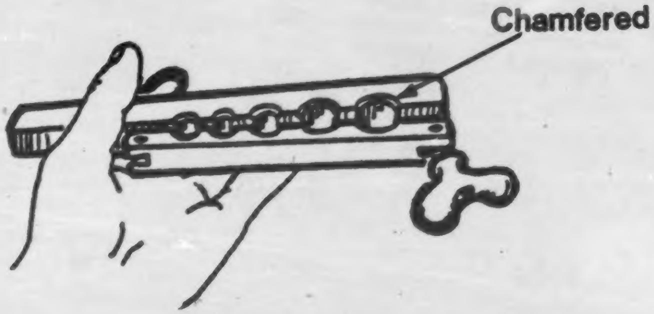
WING NUT	Threaded nut with handles for thumb and finger, which help in tightening and loosening.
CHAMFERED	Having a beveled or slanted edge.

JOB STEPS

1. Loosen the wing nuts to let the two halves of the bar separate.



2. Hold tool so the chamfered side of the die is facing up.



WORD GUIDE

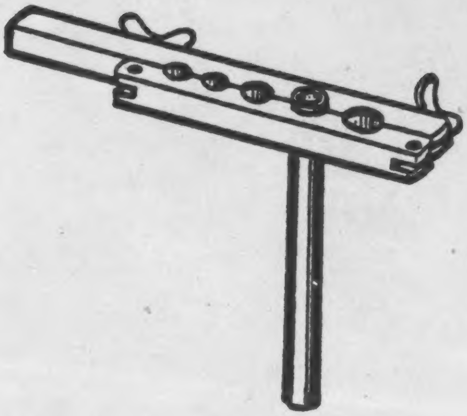
YOKE - A clamp with two parts, which when tightened holds the two parts together.

BEVEL END - End of tubing with angle or slant pointing outward.

COMPRESSOR - Something which places pressure upon something else.

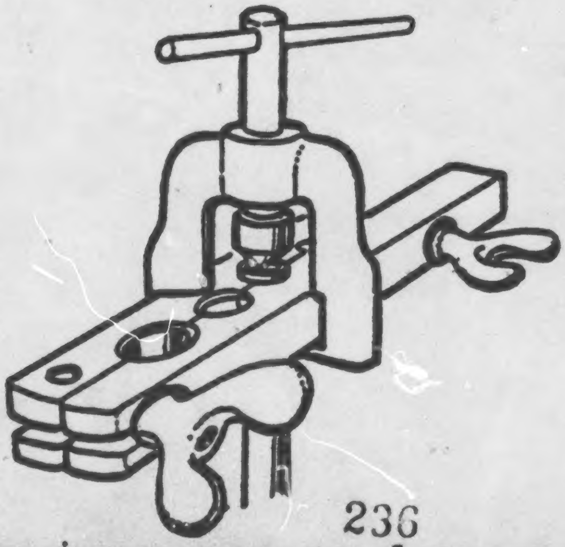
JOB STEPS

3. Insert tube into the die of proper size with end slightly above the face of tool.



4. Tighten wing nuts so pipe will not slip. Tighten nut closet to tube first then the other one last.

5. Place yoke clamp over yoke halves so the bevel end of compressor is directly over center of tube.

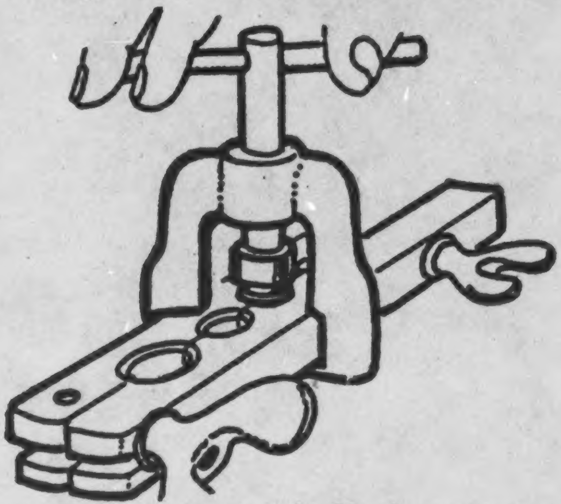


WORD GUIDE

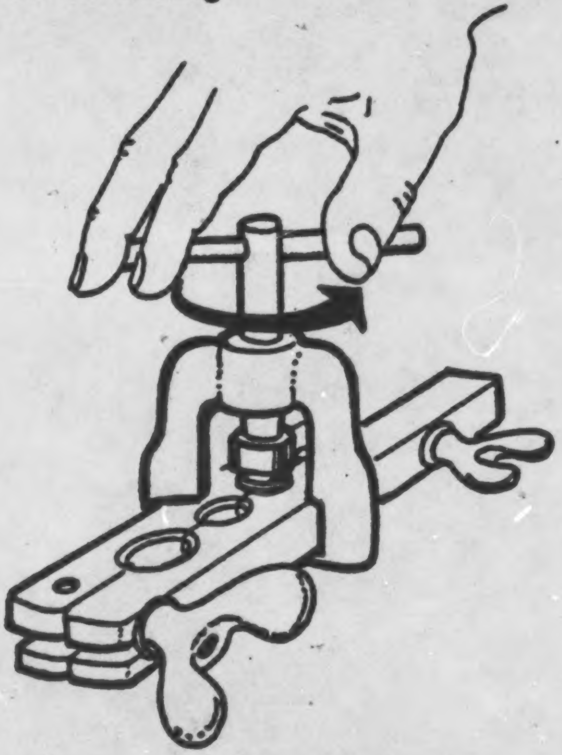
COUNTER-CLOCKWISE - The opposite direction that the hands of a clock move. Turn to the left.

JOB STEPS

6. Turn compressor screw down as far as you can turn it. This forces top of tube into the chamfered die making a 45° flare.



7. Turn compressor screw to the left (counter-clockwise) until it clears flared end of tubing.

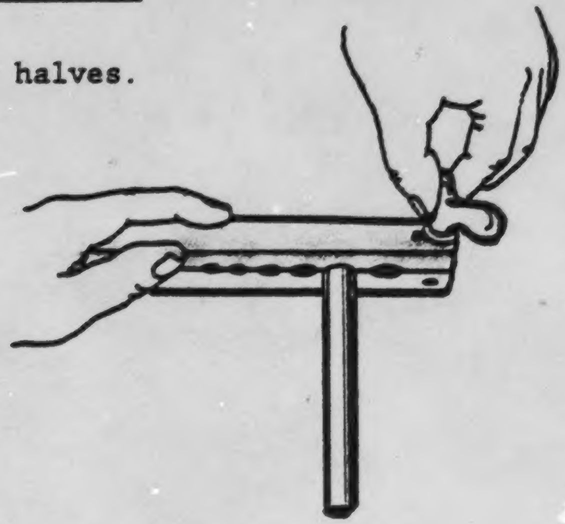


WORD GUIDE

UNIFORMITY - Same angle or flare.

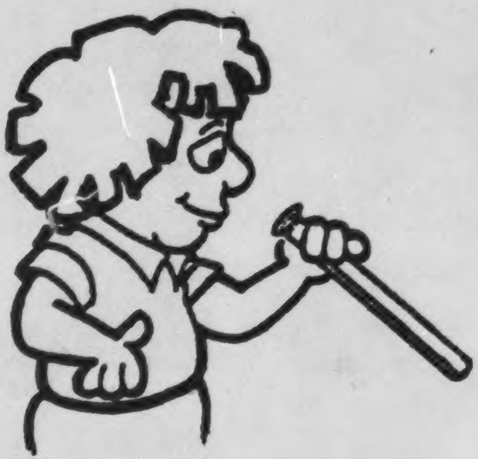
JOB STEPS

8. Remove yoke clamp from yoke halves.



9. Loosen wing nuts completely and remove tubing.

10. Inspect flared end for uniformity.



11. Put away all equipment.

building maintenance & engineering

unit: General Maintenance

capital area career center

module: 2201 02 021 date: 1-26-77 level:

skill title: Sweating Copper Tubing

developed & written by: D. Barker

visuals by: Brad Sutherland

FLUX - A paste that is put on surfaces to clean and free them from oxide and help them join together.

OXIDE - Scale that forms on metal surfaces when they are exposed to air. Especially when the metal is heated.

SOLDER - A nonferrous filler metal used to help join metals--usually made of lead and tin. 50/50 solder is composed of 50% tin and 50% lead.

BUTANE TORCH - Small cylinder filled with a gas fuel which is burned through a special nozzle.

SWEAT - To join together with heated solder.

NONFERROUS - No iron in it.

PERFORMANCE OBJECTIVE

You are going to learn:

How to sweat copper fittings and tubing together.

And in order to do this you will need:

TOOLS	MATERIALS
Tubing Cutter	12 " of 1/2 Copper Tubing
Sandcloth or Steel Wool	1 - 1/2 Copper 90° Elbow
Small Stiff Bristled Brush	Soldering Flux
Butane Torch	Roll of 50/50 Solder
Ruler and Pencil	
Clean Cloth	

We will know that you can do it when:

You have sweated a smooth joint that does not leak.

INFORMATION

Soldering is broken down into five separate activities:

1. Measurements
2. Cutting of tubing
3. Precleaning
4. Fluxing
5. Assembly

Remember these activities and be sure you learn the diagrams.

Be sure that you have read Module 2201 02 019: Use Of The Tube Cutter.

WORD GUIDE

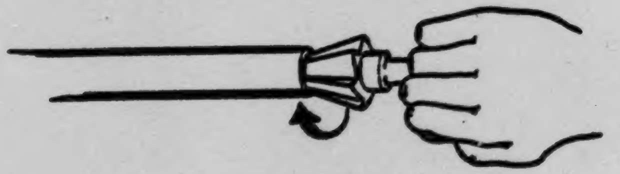
DEBURR - Remove sharp edges.

JOB STEPS

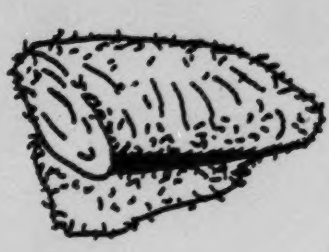
1. Take all materials to work area. Measurement - With ruler and pencil, place a mark 6 inches from the end of the tubing.

2. With tubing cutter, cut tubing at the 6 inch mark.

3. Deburr the tubing by twisting the deburring tool.



4. Precleaning - Using sandcloth or steel wool, clean slightly more than the length required for full insertion of the tube into the cup of the fitting.



ABRASIVES - Small pieces left from filling or grinding.

FLUX - A paste that is put on the surfaces to clean and free them from oxide and help them join together.

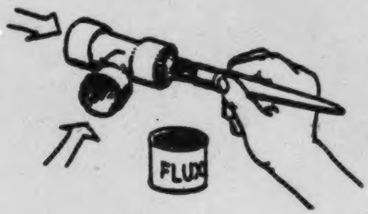
OXIDE - Scale that forms on metal surfaces when they are exposed to air. Especially when the metal is heated.

JOB STEPS

5. Clean the cup of the fitting bore using the sandcloth or steel wool.

6. Use a clean cloth to wipe both surfaces of any remaining particles of abrasives, filling, and grit.

7. Fluxing - With a small brush, wipe a thin layer of flux on areas which have been cleaned.

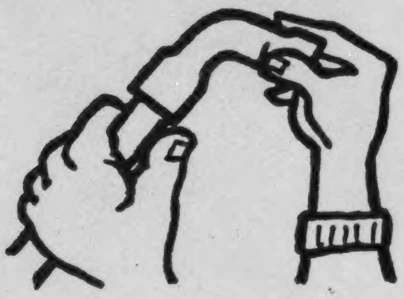


BUTANE TORCH - Small cylinder filled with a gas fuel which is burned through a special nozzle.

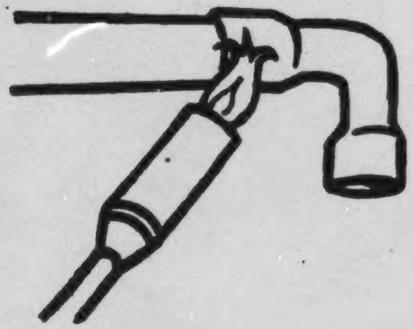
SOLDER - A nonferrous filler metal used to help join metals--usually made of lead and tin. 50/50 solder is composed of 50% tin and 50% lead.

JOB STEPS

8. Assembly - Place 90° elbow on tube with a twisting motion.

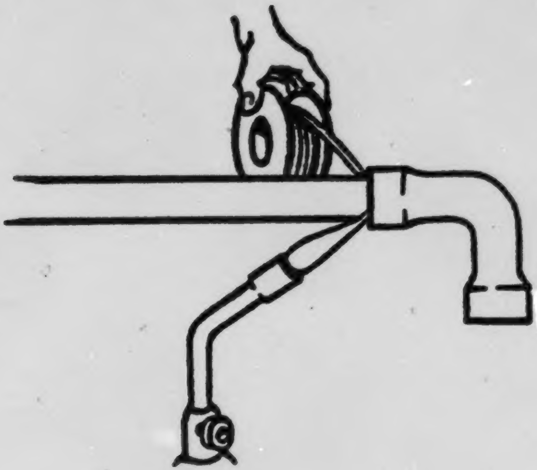


9. Light butane torch and direct flame toward fitting as shown in picture. Keep flame moving so as to heat as large an area as possible. When the metal is hot enough, the flame should be moved away and the solder should melt on contact with the tube.

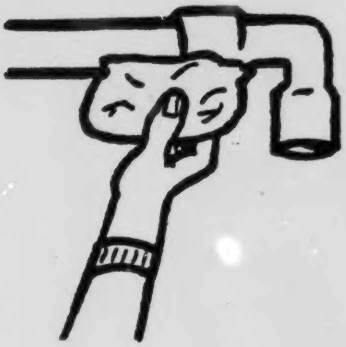


JOB STEPS

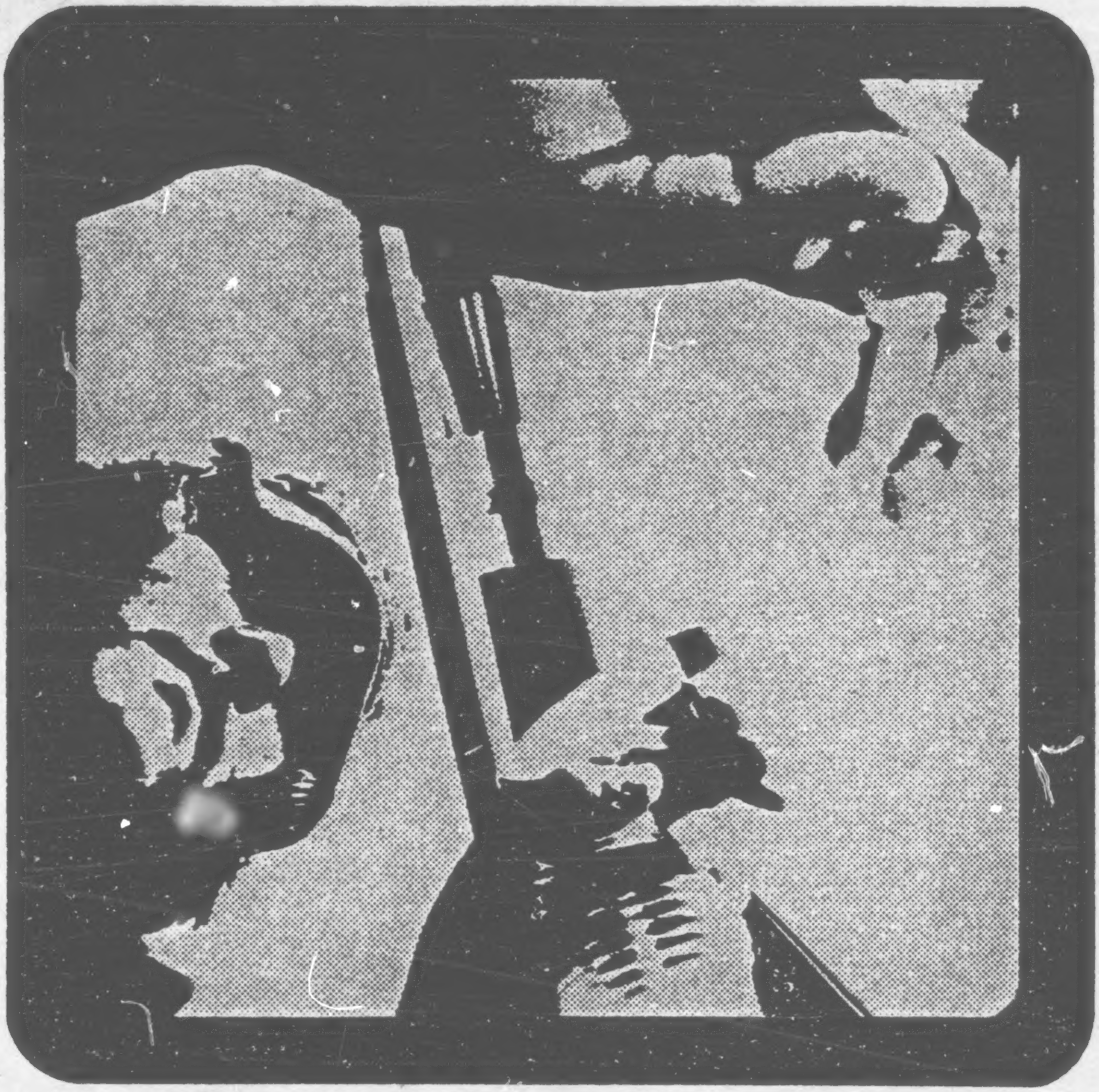
10. Apply solder as shown in picture. When the solder begins to drip from bottom of the fitting, the joint is filled. Before the drip on the bottom of the fitting hardens, lightly wipe away with clean cloth.



11. After joint has cooled, wipe filling and tubing off with a rag.



12. Clean and put away all equipment.



building maintenance & engineering

unit: General Maintenance

capital area career center

module: 2201 02 022 date: ______ level: ______

skill title: Soldering Copper "T" into Existing Line

developed & written by: Douglas Barker

visuals by: David Wehrwein

WORD GUIDE

"TEE" OR "T" - In this case, copper fitting adaptable to copper tubing.

PERFORMANCE OBJECTIVE

You Are Going To Learn:

How to place a "T" in an existing water line.

You Will Need The Following Tools and Materials:

Tools	Materials
tubing cutter	existing 1/2 inch copper water line
balance torch	1/2 x 1/2 x 1/2 copper tee
flux (soldering)	safety glasses
solder 50/50	reamer (hand)
flux brushes	
sand cloth	
rags	
fire extinguisher	

We Will Know You Can Do It When:

The solder is not smeared all over the copper pipe and an even supply of solder appears all around the connection. There shall be no leaks when pressure is applied.

WORD GUIDE

MEASUREMENT & LAY-OUT - See Instructor.

INFORMATION

You need to read:

Module 2201 02 019
Use of Tubing Cutter

Module 2201 02 021
Sweating Copper Tubing

You need to know:

All the definitions and diagrams referred to in the modules listed above.

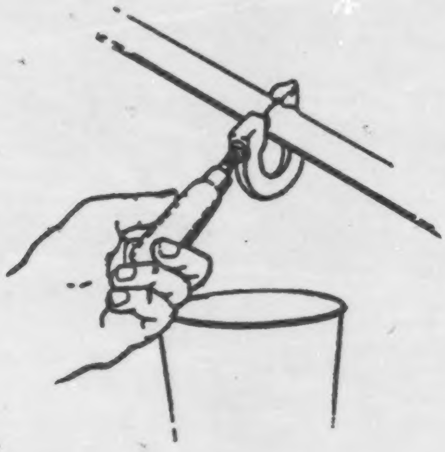
Ask your instructor for help with measurements and lay-outs.

JOB STEPS

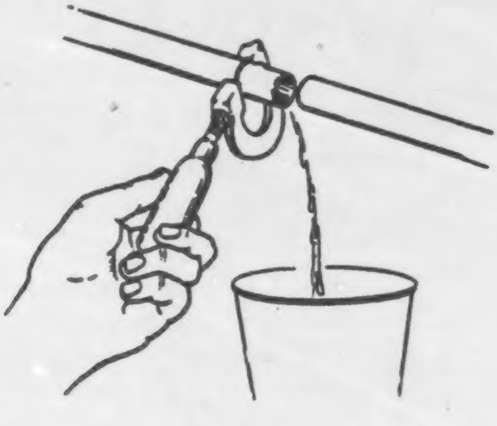
1. Put your equipment and materials near the mock-up.

2. Turn off pressure on line and open nearest hot and cold valves or faucets. Leave them open.

3. Using tube cutter, cut line, and allow all water to drain out.

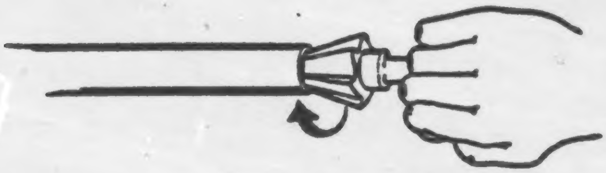


4. Make a second cut one half inch from the first cut. You now have room to insert a "T" fitting.

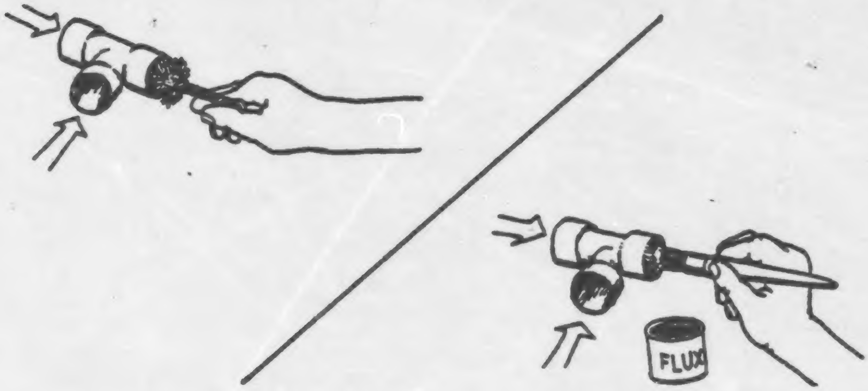


JOB STEPS

5. Twist the hand reamer in both ends of the tubing in order to remove burrs and rough edges.



6. Take 1/2 inch wire brush and clean all three ends of the "T" and apply flux to area cleaned.



WORD GUIDE

ALIGN - Put "in line" or at same level.

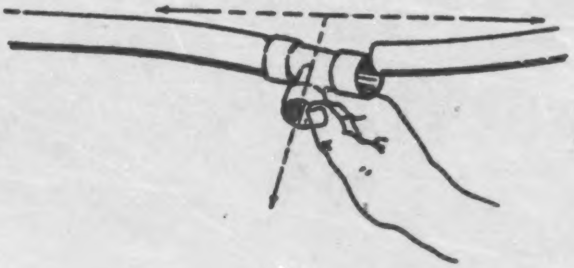
CRIMP - Bend or wrinkle (in metal).

HAZARD (fire) - Something that could catch on fire easily.

JOB STEPS

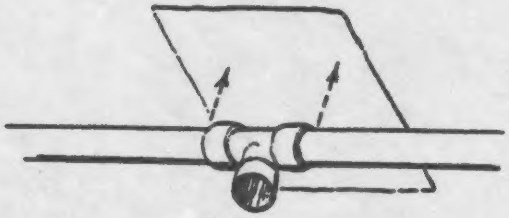
7. Using a piece of emery cloth, clean both ends of line you just cut and apply flux to area cleaned.

8. Install "T" into line by carefully spreading line apart and align the lead opening of the "T" in the direction you want the line to go.



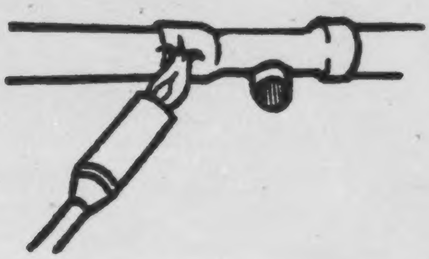
9. Observe the area for fire hazards such as wood, papers, or rags Remove them and place a fire extinguisher near the work area.

10. Use asbestos paper soaked in water to cover any area that may catch on fire.

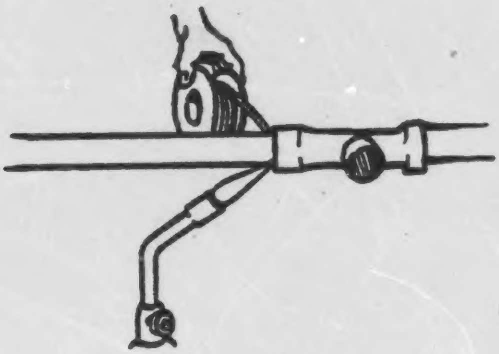


JOB STEPS

11. Light the propane torch and point the tip of the flame at the bottom of the fitting to be soldered. Move it around continually.

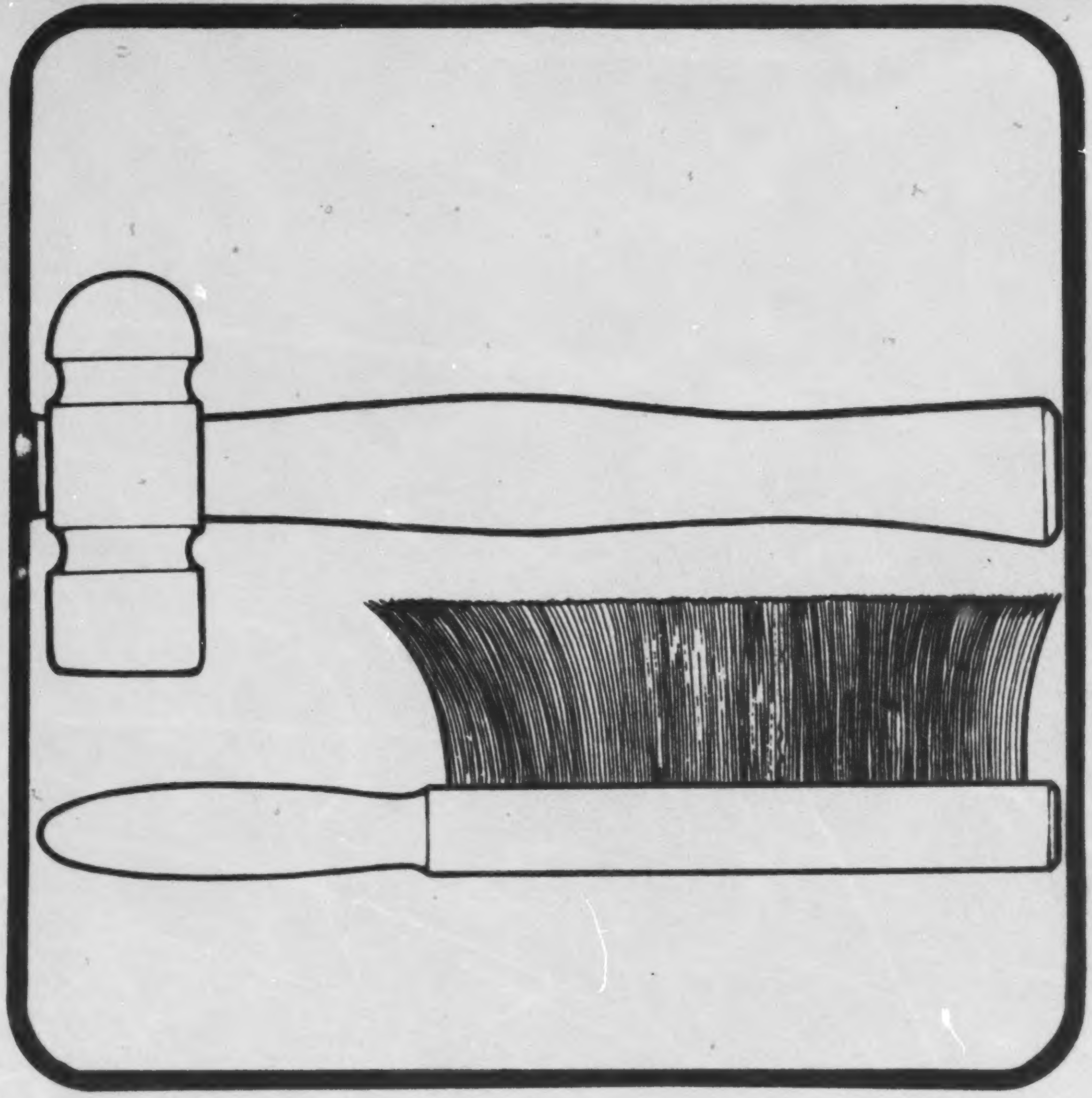


12. After about 10 seconds, touch the end of the wire solder to the top of the fitting end. If it is hot enough the solder will melt and enter between the fitting and the pipe. If it doesn't, heat a little more, try again. When it enters, move solder all around the pipe quickly and stop.



NOTE: Do not apply too much solder. If too much is applied, a knob of solder will hang at the bottom of the pipe resulting in a bad appearance. Should this happen, apply a light amount of heat to the knob and wipe it off quickly with a piece of cloth.

13. Put away all equipment.



building maintenance & engineering

unit: GENERAL MAINTENANCE TASKS

capital area career center

module: 2201 02 023 **date:** January 1977 **level:** II

skill title: Servicing Air Compressors

developed & written by: Donald West

visuals by: Marie Gougeon

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

How to identify the parts of an air compressor, and how to maintain an air compressor according to a schedule.

AND IN ORDER TO DO THIS YOU WILL NEED:

Air Compressor

Small Tool Kit

Small Paint Brush

Container of Oil

Small Funnel

Steel Pocket Rule

Wiping Cloth

WE WILL KNOW YOU CAN DO IT WHEN:

You can correctly identify the parts of an air compressor. You are able to do the weekly and three-month maintenance on the air compressor.

INFORMATION

In order to be able to understand and do the job steps, first learn the parts of the compressor and do the reading below.

READ: Complete Guide to Building and Plant Maintenance P. 381.

READ: Explanation of compressor parts. Look at the pictures of the parts as you read the description. Locate the parts on the compressor. As a review, identify the parts of the compressor using the picture on page 8.

LOOK AT: The maintenance schedule cards.

PARTS EXPLANATION

FIG. A **Air Compressor Tank** - Where the air is compressed and stored.

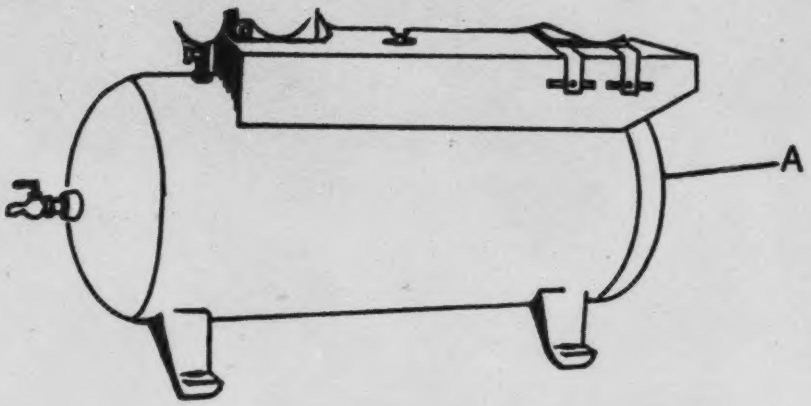


FIG. B **Drain Valve** - Used to drain moisture from tank.

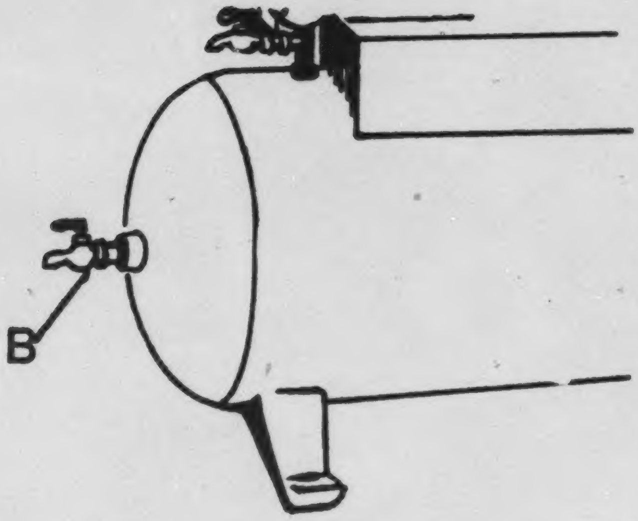


FIG. C **Pressure Gauge** - Shows the pressure of the air in the tank in Pounds Per Square Inch (P.S.I.).

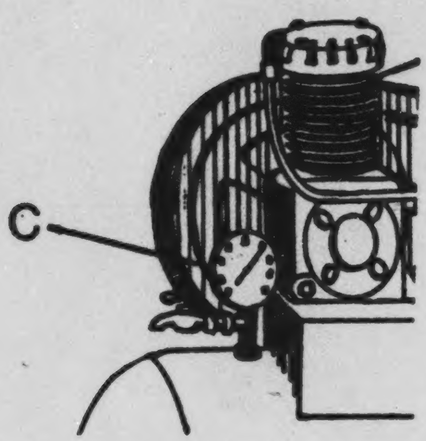


FIG. D **Air Safety Valve** - With ring-type lifter for test. Often found on the air line from the compressor.

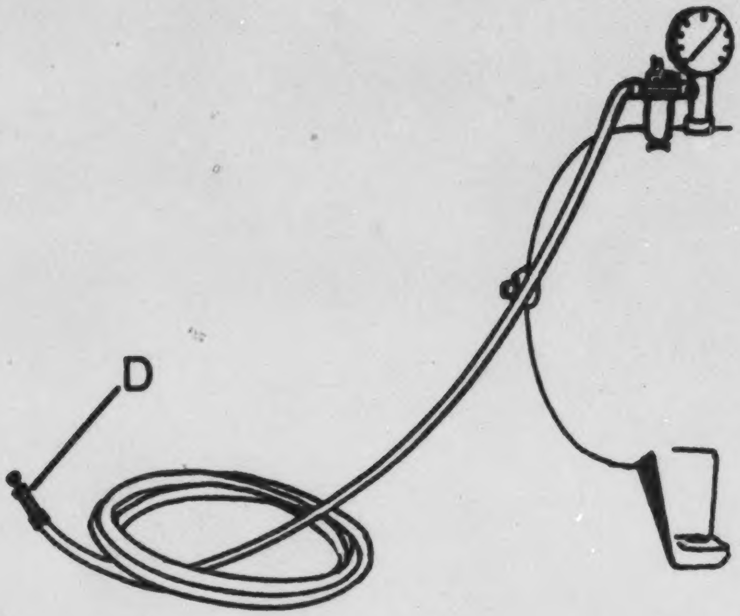


FIG. E Compressor Pump - Notice also the cooling fins, air filter, oil level gauge, and oil drain plug.

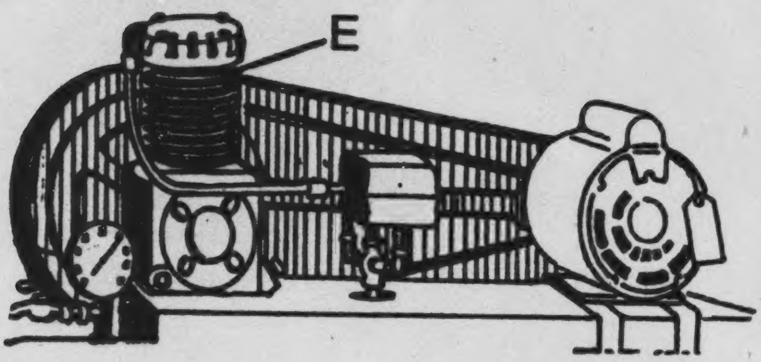


FIG. F Pressure Controls - There will be one on the compressor. It controls the low pressure at which the compressor starts and the high pressure at which the compressor stops.

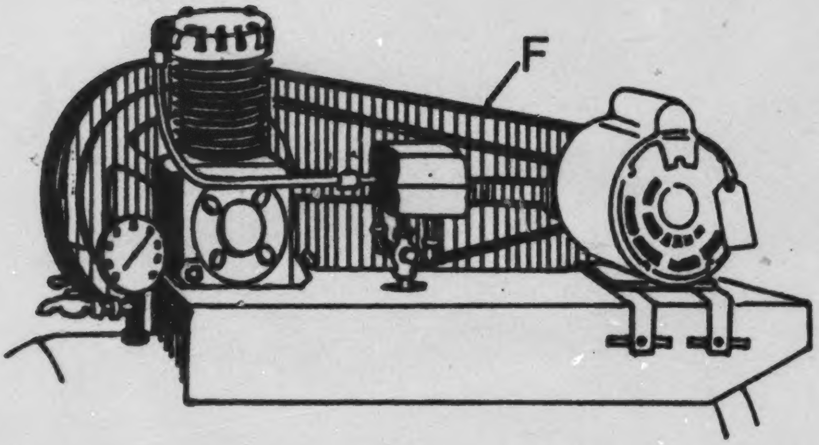


FIG. G **Belt Guard** - Must be around the belt and pulleys.

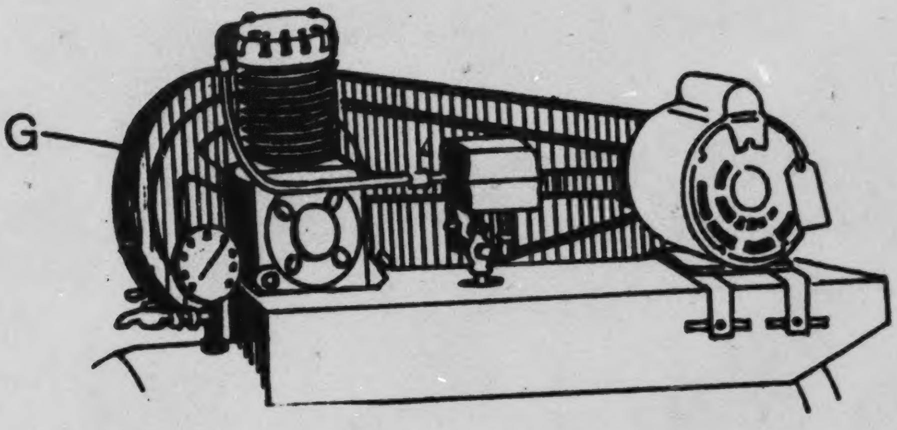
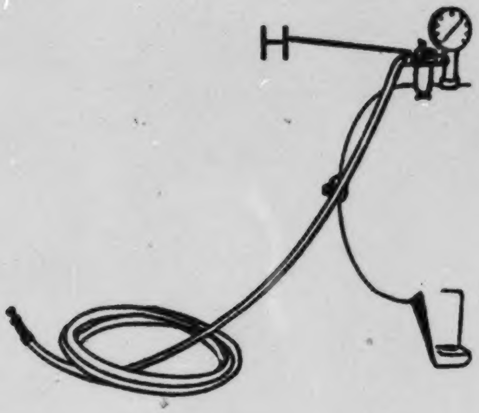
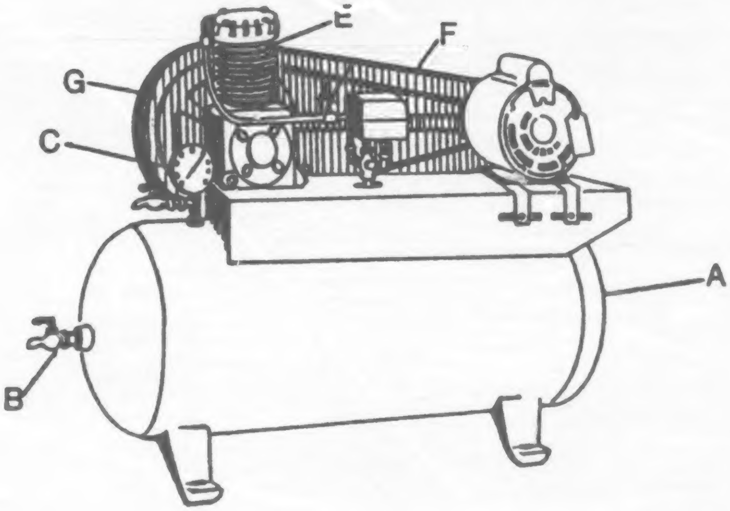


FIG. H **Filter-Regulator** - Notice also its drain-valve.



FREQUENCY OF MAINTENANCE

In order to maintain an air compressor in good running order, there are certain maintenance items that are checked every week, and others that are done every three months. A maintenance schedule card should be attached to the compressor. After you have performed maintenance, be certain that you write the date and your initials in the next available place on the card.

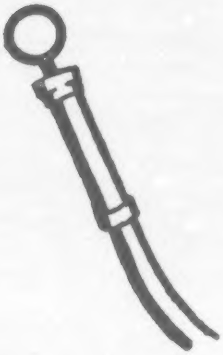


JOB STEPS

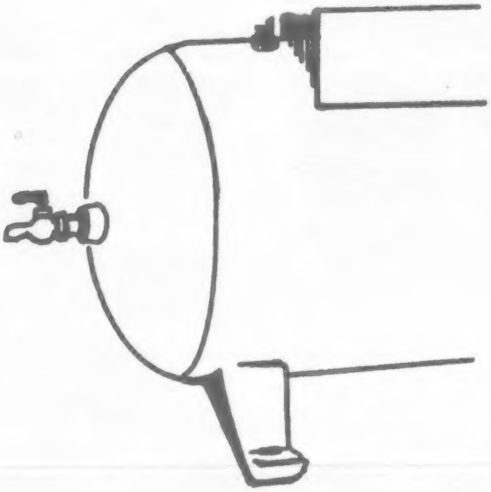
EVERY WEEK CHECK:

1. Take all equipment to work area.
   Listen for any air leaks. If you hear one, tell your instructor.

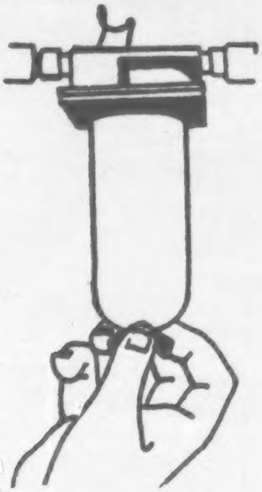
2. Find the air safety valve (fig. D). Pull up on the ring lifter and then release it. If, when you pull up, air comes out, the valve is working OK. If no air comes out, tell your instructor.



3. Find the drain valve (fig. B). Open it. When the air coming out is no longer cloudy, close it.

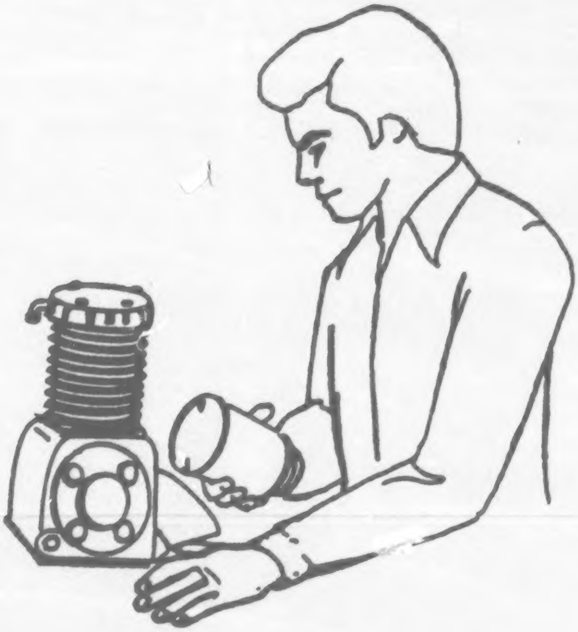


4. Find the filter regulator (fig. H). Find the drain valve at the bottom. Open it. When the air coming out is no longer cloudy, close it.



5. Turn off the power to the compressor motor.

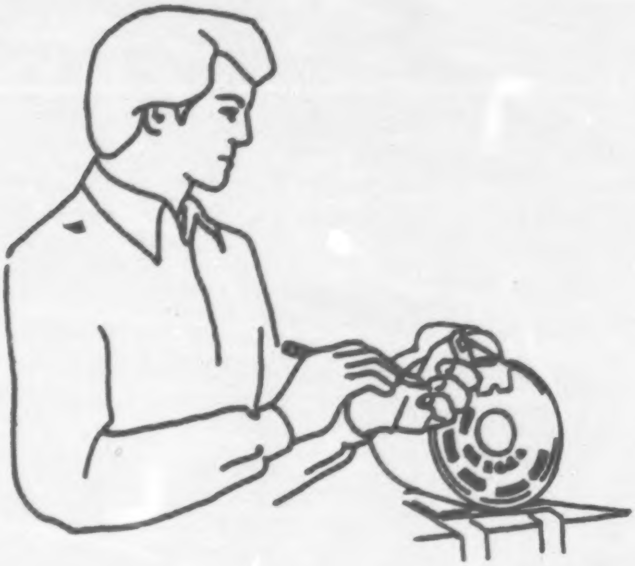
6. Find the oil level gauge on the pump (fig. E). With some compressors, there is a dipstick attached to the plug. With those that don't have a dipstick, simply look in the hole and see if the oil is up to the bottom of the screw threads. If oil level is below the "full" mark on the dipstick, or below the level of the screw threads, add oil. Do not overfill!



7. Look for cracking or fraying of the belts. If you find any, ask your instructor how to change them.

8. Turn on the power to the compressor.

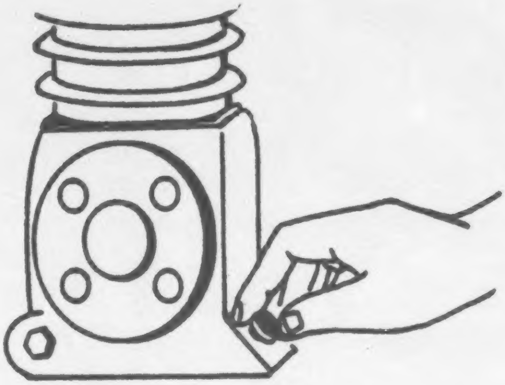
9. Write the date and your initials on the 1-week maintenance schedule card.



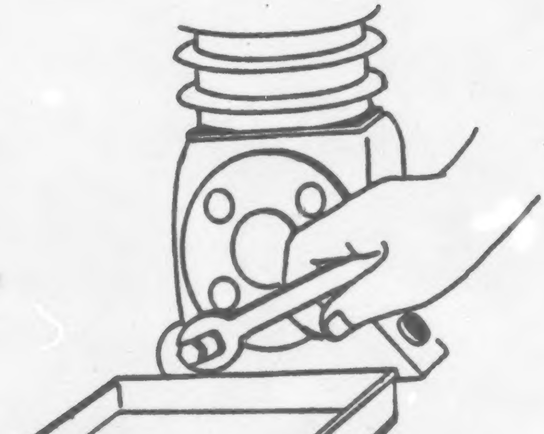
THREE MONTHS CHECK:

1. Turn off the power to the compressor motor.

2. Change crankcase oil. First, open up the oil screw plug where level is checked.

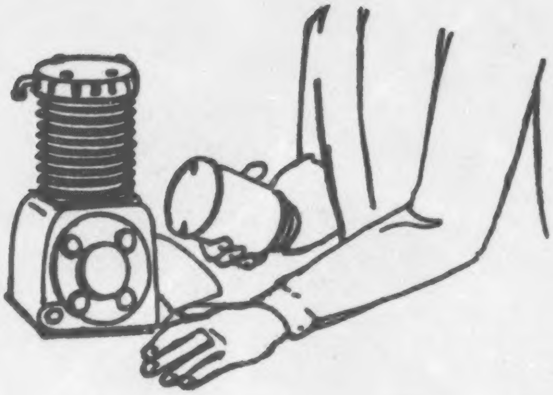


3. Put an oil pan under the oil drain plug and take out the plug by using a wrench.

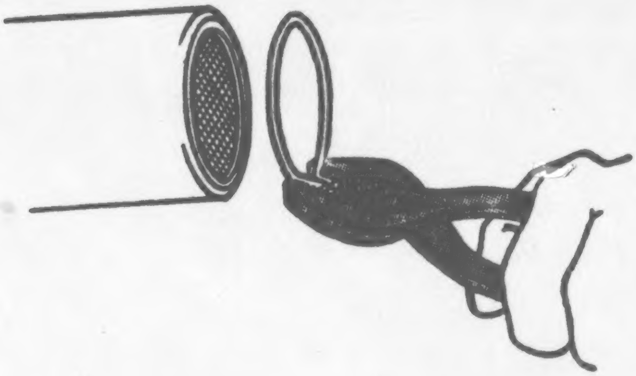


4. Let the oil drain out, then replace the plug.

5. Refill the crankcase to "full" mark with new oil.

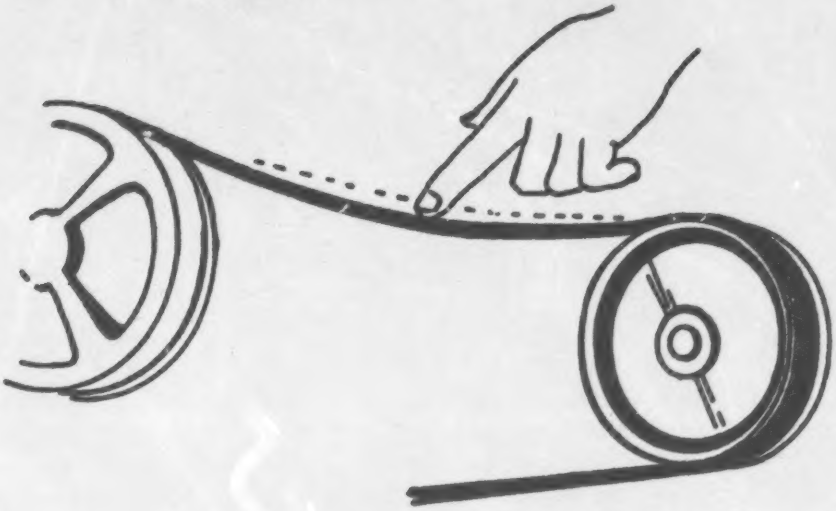


6. Now remove the air cleaner. On some compressors a snap ring holds a piece of screen against a round piece of filter material. Release the snap ring with pliers and replace the filter material with a new one. Replace the screen and snap ring. On other compressors there is an oil-wetted filter element. Unscrew the wing nut and remove the filter element. Wash it in special solvent (see your instructor), dip it in oil, drain off the excess oil and reassemble.

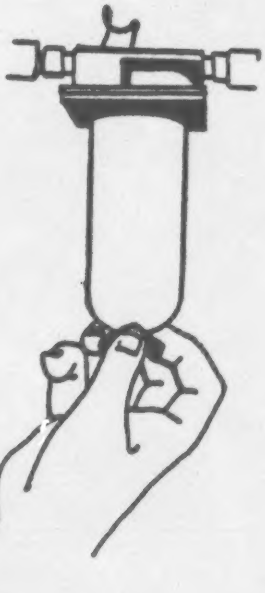


7. Check the belt tension. Depress the top of the belt with the side of a screwdriver. It should depress about 1/2 inch. If not correct, loosen the bolts holding the motor down and slide forward or back until the belt tension is correct. Tighten the motor bolts.

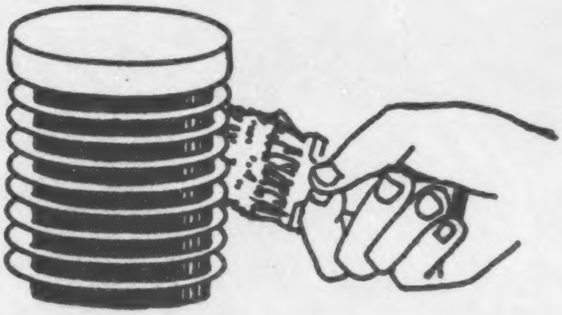
   NOTE: You may have to reach through the belt guard to check the belt tension.



8. Clean or replace filter element in filter-regulator. Ask your instructor how to do this as there are many different styles.



9. Clean the cooling fins using a small brush. Also clean off any other dirt on other parts of the air compressor using the brush or cloth.



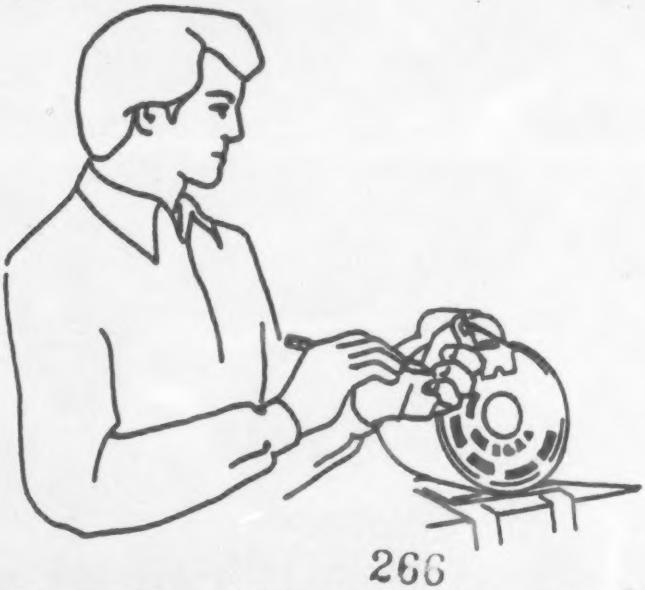
10. Grease the motor using a grease gun. Normally about two cranks is enough. You will find small grease fittings on the motor over which the end of the grease gun will fit.

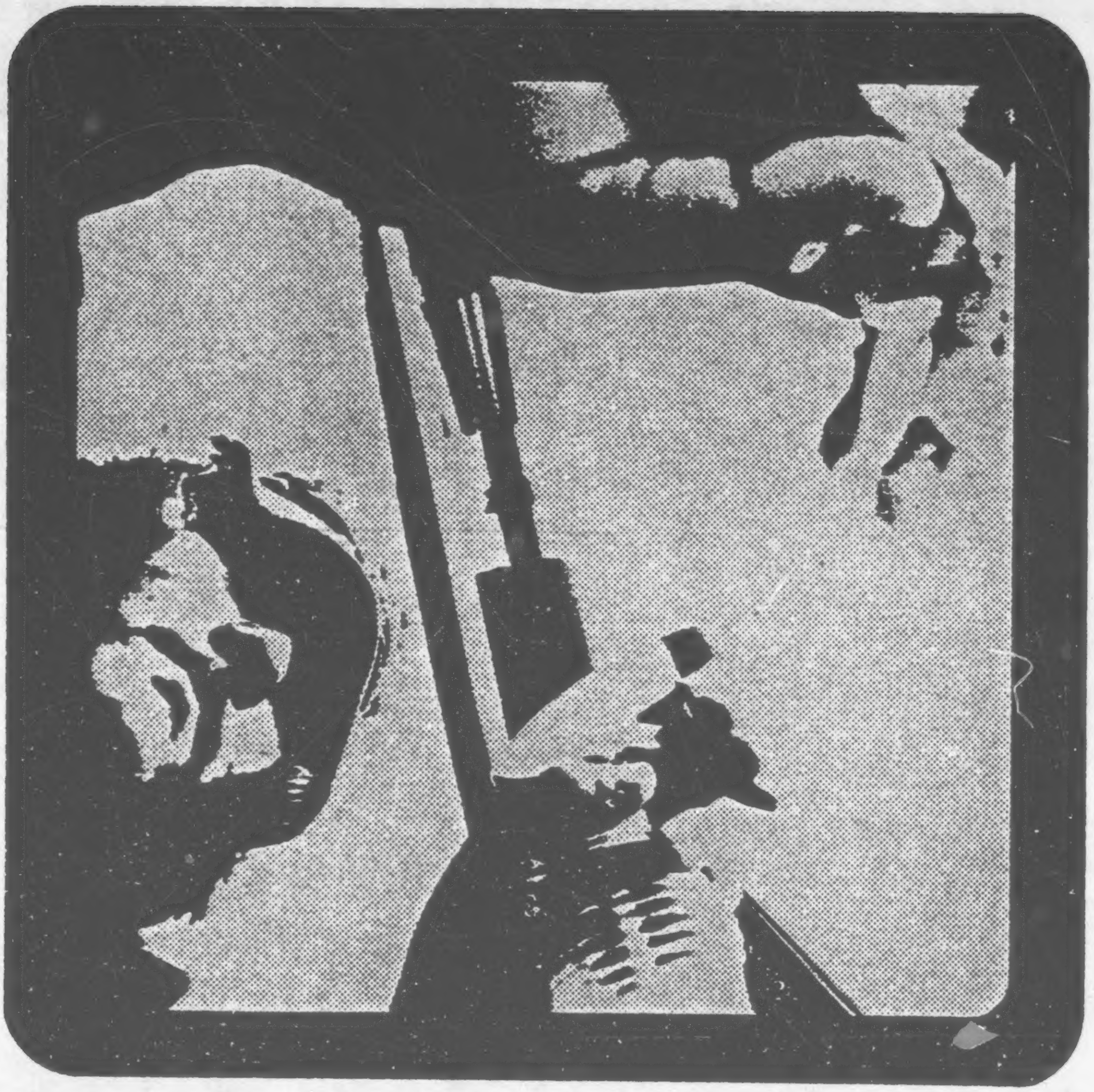
11. Turn on power to compressor motor.

12. Write the date and your initials on the 3-month maintenance schedule card.

    NOTE: Ask your instructor how to check and adjust the pressure control. This should be checked about every six months.

13. Put away all equipment.





building maintenance & engineering

unit: GENERAL MAINTENANCE TASKS

capital area career center

module: 2201 02 024 date: 4/75 level:

skill title: DOOR CLOSERS

developed & written by: DON WEST

visuals by: Bill Draper

WORD GUIDE

ADJUST - Change to make something work better.

PERFORMANCE OBJECTIVE

You are going to learn:

How to do preventive maintenance and adjustment on a door closure.

And in order to do this you will need:

A mock-up of a door closure
Standard screwdriver
Phillips screwdriver
Allen wrench
Adjustable wrench
Pliers
Oil can
Cleaning Cloth
Step Ladder

We will know you can do it when:

The door you have adjusted shuts slowly enough to let a person through, it does not slam, all holding screws are tight, and hinges are oiled.

INFORMATION

Door closers should be checked and maintained every six months. Ask your instructor if you should read more about door closers.

INSPECT EVERY SIX MONTHS

Read the following material:

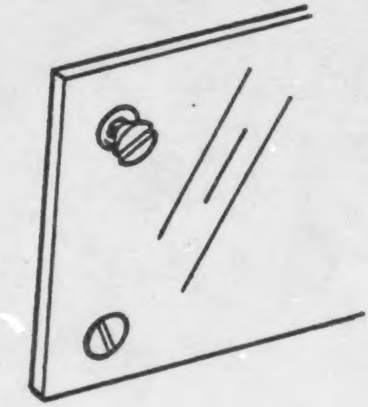
Sacks, Chapter 38 Page 465

WORD GUIDE

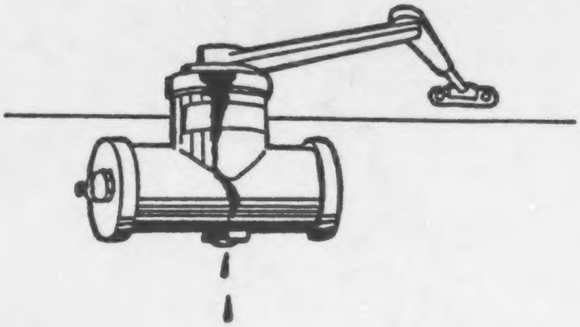
CYLINDER	Case filled with oil and a piston that moves back and forth.

JOB STEPS

1. Check all screws, bolts, nuts to see if they are tight.



2. Look for any oil leaks on CYLINDER.

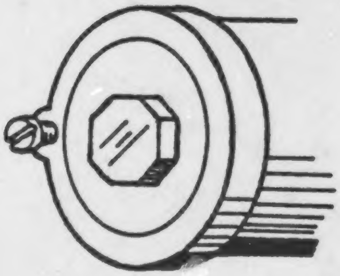


WORD GUIDE

SWEEP SPEED -	Speed door travels from wide open to 6 inches from closed.
LATCH SPEED -	Speed door travels the last 6 inches to closed position.

JOB STEPS

3. Check sweep and latch speeds and adjust by adjustment screws on end of cylinder (see picture).



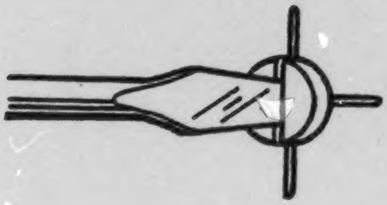
NOTE: On some models this screw is on front of unit, on some in back of unit on the bottom.

WORD GUIDE

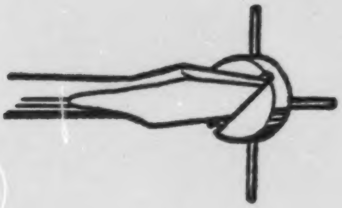
MANUFACTURER - People who make the door closer.

JOB STEPS

4. Turn screw in--the door closes slower. Turn screw out--the door closes faster. There are normally 4 marks around the screw. Adjustment from mark to mark controls the sweep speed.

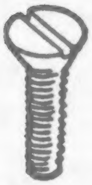


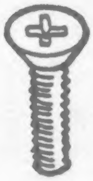
5. Adjustment between the marks controls the latch speed. Set between mark to the speed you want.

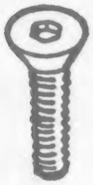


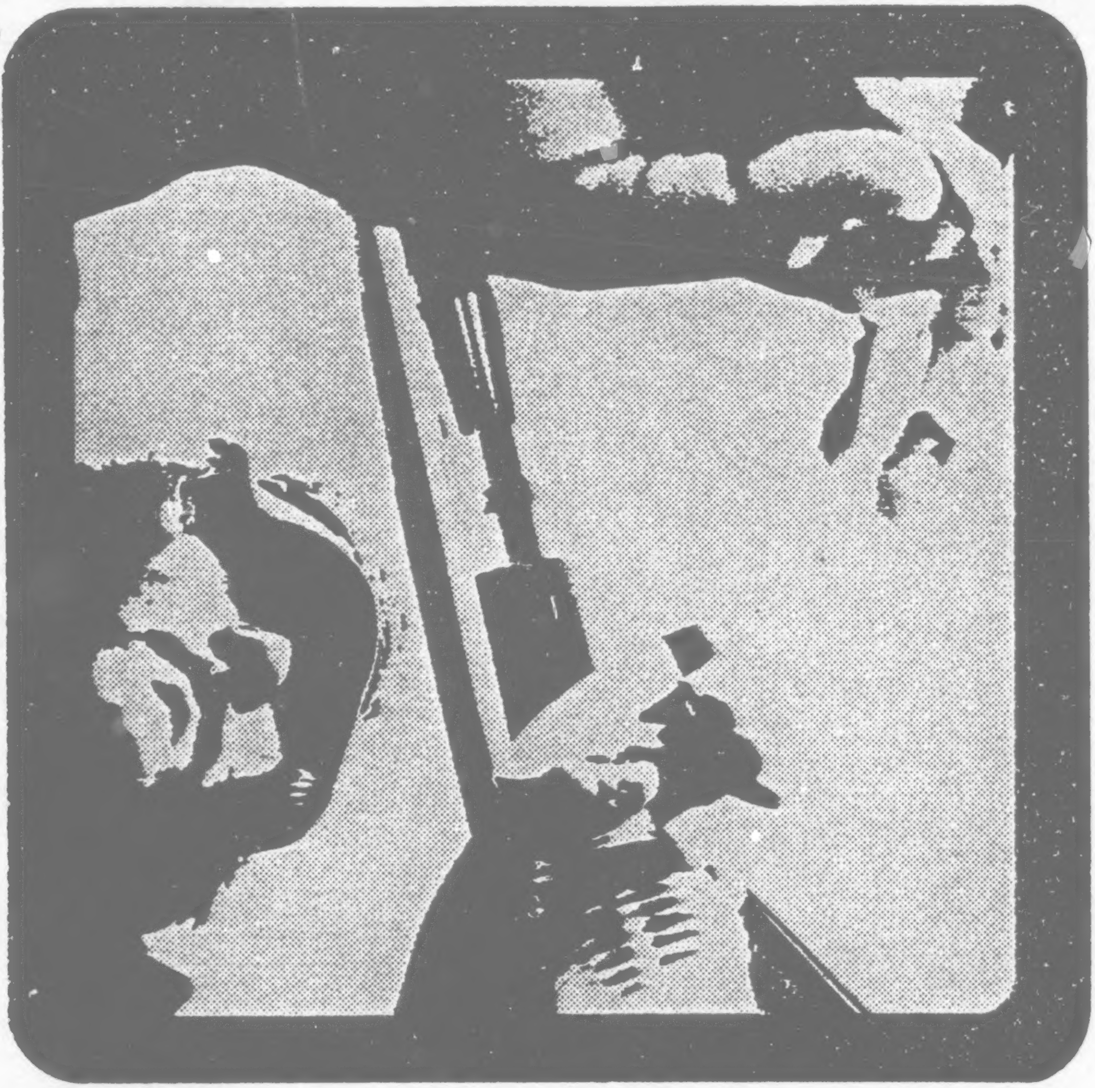
JOB STEPS

NOTE: On some models there is a regular screw, on some a phillips screw and on some an allen screw.









building maintenance & engineering

unit: General Maintenance

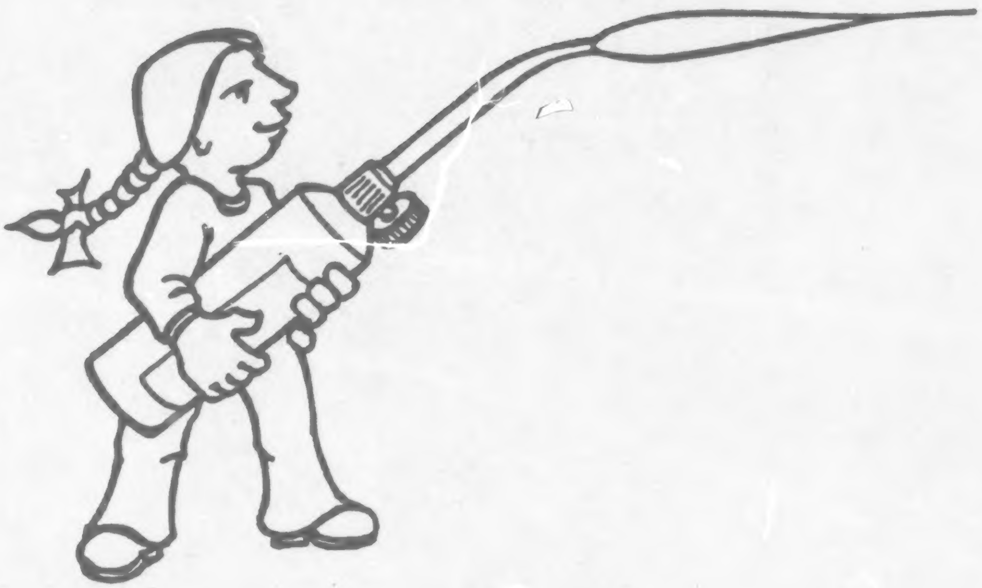
capital area career center

module: 2201 02 025 date: ______ level: ______

skill title: Operation of the Propane Torch

developed & written by: Donald West

visuals by: ______



PERFORMANCE OBJECTIVE

You Are Going To Learn:

How to operate a propane torch.

And In Order To Do This You Will Need:

A propane torch

A spark lighter

A fire extinguisher

We Will Know That You Can Do It When:

You can assemble a torch (burner, and propane tank), ignite it, and maintain a blue flame 1-1½ inches in length.

INFORMATION

SAFETY NOTES:

1) Do not direct the flame towards things that will catch on fire.

2) Do not allow solder or other material to drop into end of burner tip.

3) When finished, allow torch to set in upright position until burner cools off.

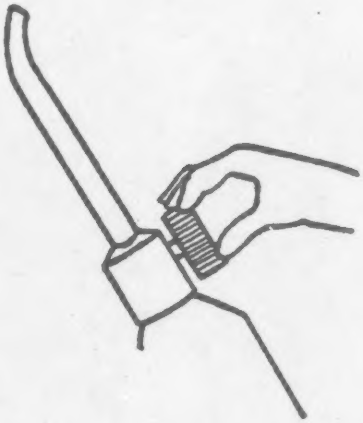
4) When unit is cool, disconnect burner from torch.

WORD LIST

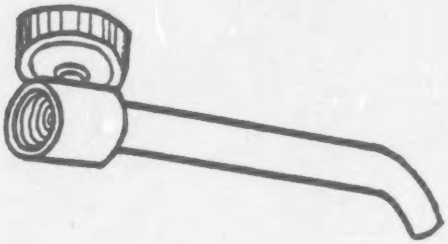
GAS VALVE - Controls the amount of gas which comes out.

JOB STEPS

1. Turn off the gas valve.

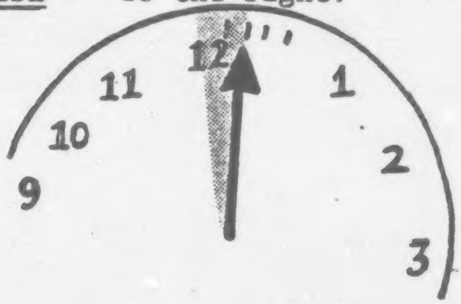


2. Find the threaded end of the propane torch.



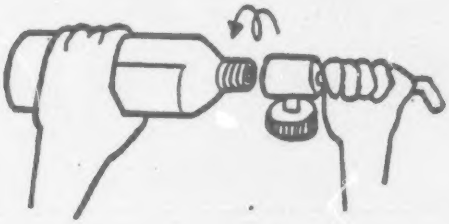
WORD GUIDE

CLOCKWISE - To the right.

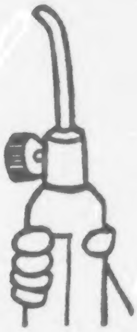


JOB STEPS

3. Attach the pencil flame burner by screwing it clockwise onto the threaded end of the propane tank.



4. Hold torch upright (with propane tank under.)

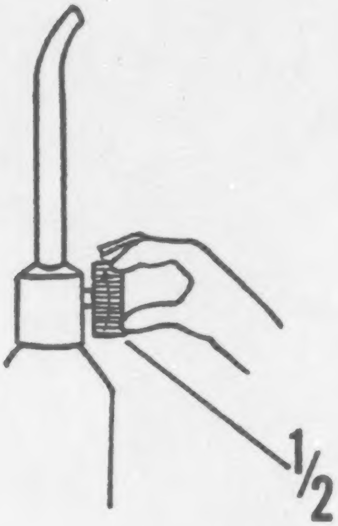


WORD GUIDE

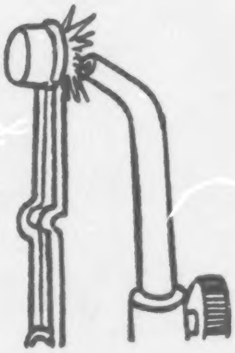
SPARK LIGHTER - when scratched, produces a spark.

JOB STEPS

5. Open the gas valve with a 1/2 turn.



6. Snap the spark lighter in front of and close to the burner opening.



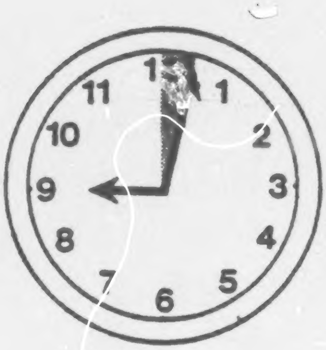
Gas will ignite and burn with a blue flame.

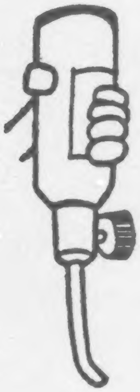
WORD GUIDE

INVERTED - bottom-side-up.

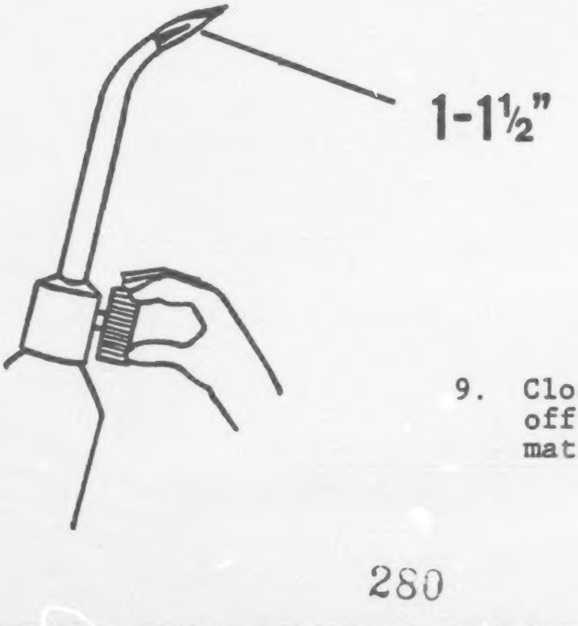
JOB STEPS

7. If torch is to be used inverted (tank up), let it warm up for 2 minutes.

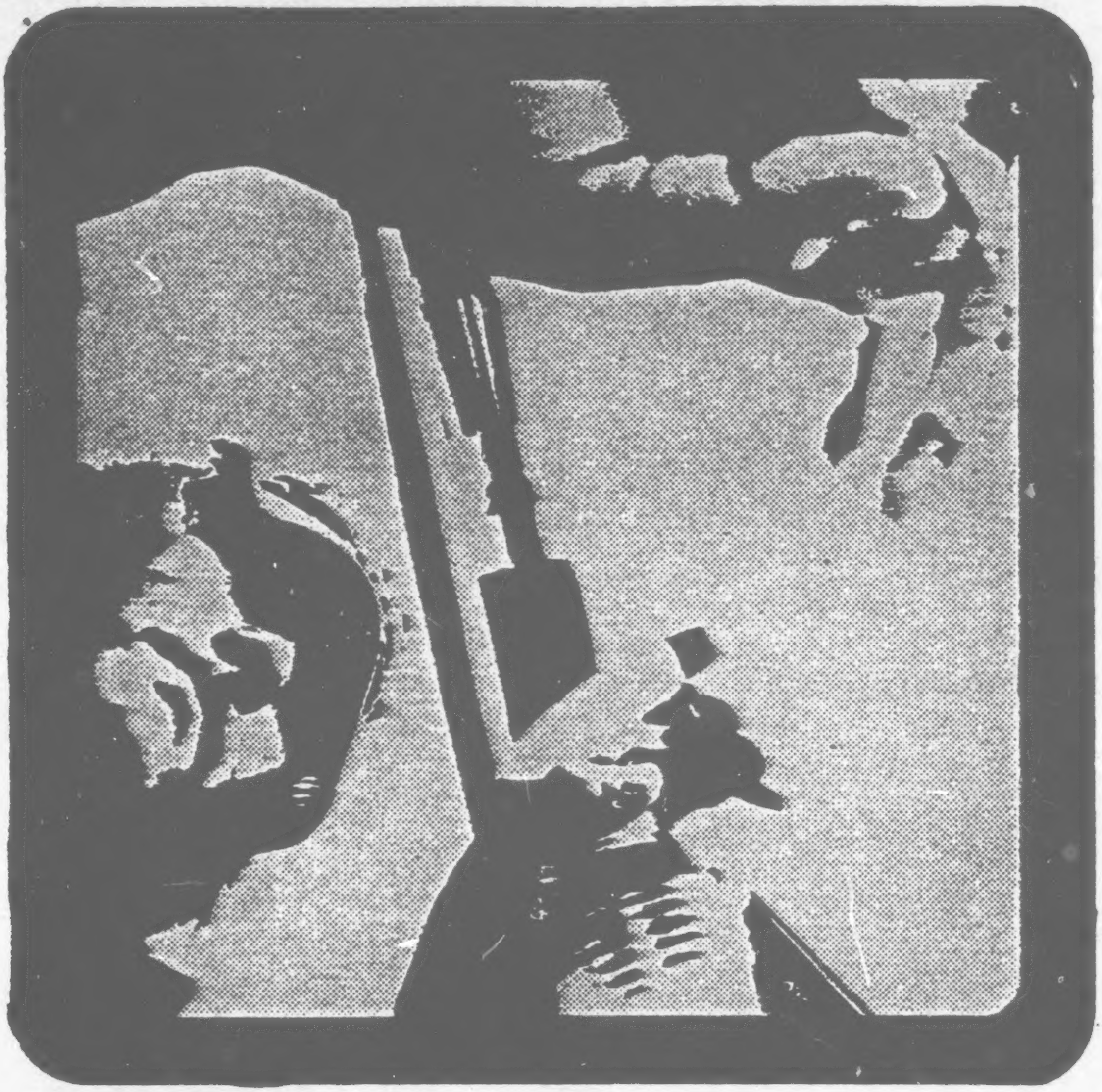




8. Adjust flame length so that it is 1-1 1/2 inches long. Burner is now ready to use.



9. Close gas valve to shut off gas. Re-read Information Page: Safety Notes.



building maintenance & engineering

unit: Building Maintenance (Plumbing)

capital area career center

module: 2201 02 026 date: 2/15/77 level:

skill title: Familiarization of Power Threading Machine

developed & written by: Don West

visuals by: Dave Wehrwein

WORD GUIDE

REAMER - A cone-shaped tool used to smooth out the inside edge of a pipe.

PERFORMANCE OBJECTIVE

You Are Going To Learn:

How to identify and use each tool on a power driven pipe machine: a cutter, a reamer, and a die-head threader.

And In Order To Do This You Will Need:

A length of pipe

Cutting oil

Gloves

Safety glasses or goggles

Steel measuring tape

Pencil

A power driven pipe machine- complete with cutter, a reamer, and a die-head threader.

We Will Know You Can Do It When:

1. You have cut a piece of pipe to the right length.
2. You have reamed the cut end of the pipe so there are no burrs or ridges.
3. You have threaded the cut end of the piece of pipe 3/4 of an inch in length so that a fitting can be easily screwed on it.

INFORMATION

Watch the slide-tape on Familiarization Of Power Threading Machine before doing this module.

JOB STEPS

1. Take all equipment to work area. Then, review safety-operation pointers:
   a. Do not wear loose clothing.

   b. Wear safety glasses or goggles.

   c. Be sure power is off before touching equipment.

   d. Make sure machine has stopped all movement before changing tools or material.

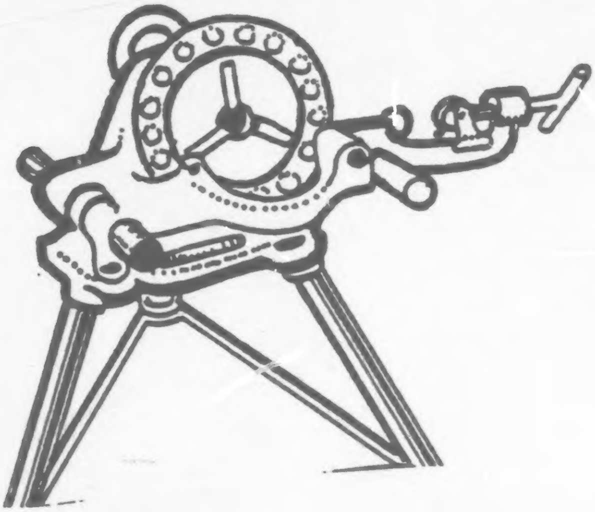
   e. Become familiar with the operation of the power switch.

   f. Wear gloves to protect hands from hot metal chips and also to prevent slivers.

   g. Use cutting oil on all threading and cutting operations.

2. IMPORTANT: Check how to run the machine by operating the off-forward-reverse switch. Be sure machine stops before changing directions.

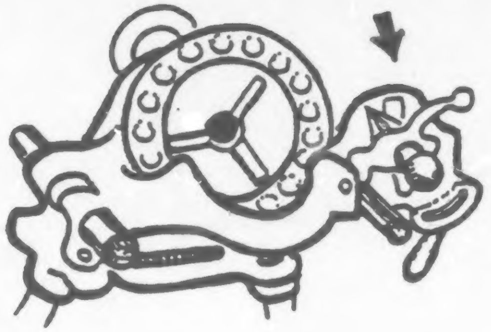
3. Learn how to operate the front and rear chucks. Turning up towards you (counter-clockwise) makes the chuck opening smaller (grips the pipe). Turning down towards you (clockwise) opens up the holding jaws and loosens the chuck.



JOB STEPS

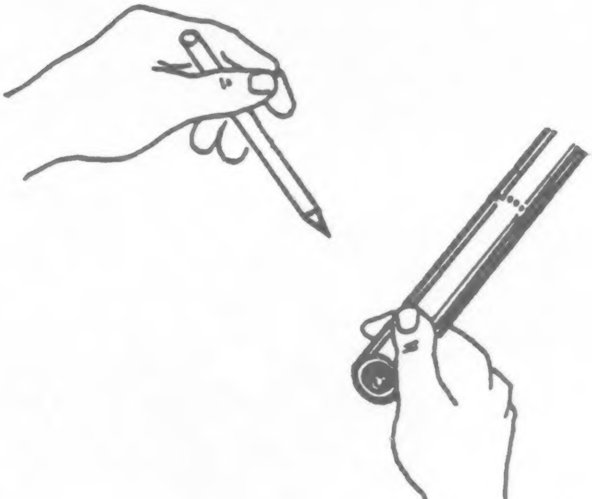
4. Open both chucks to let the pipe fit in.

5. Swing the cutter, the die-head threader, and the reamer out of the way.



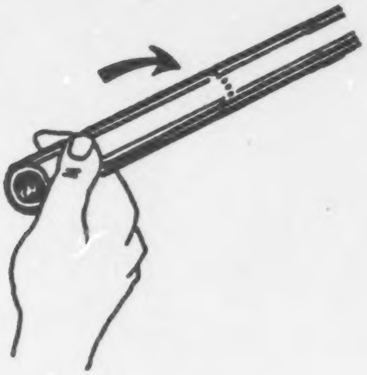
6. Put the pipe through the rear chuck and through the front chuck. If the pipe is short (under 3 feet) it may be inserted through the front chuck first.

7. Use a steel measuring tape to measure from the end of the pipe that sticks out of the front chuck and make a pencil mark on the pipe.



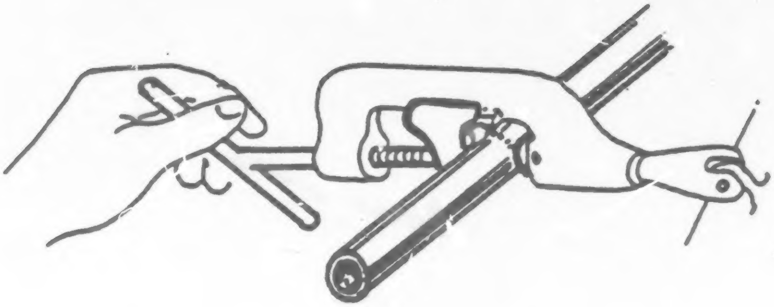
JOB STEPS

8. Turn the pipe so that the pencil mark will be almost below the cutter when the cutter is flipped over.



9. Fasten the pipe by tightening both the front and rear chucks.

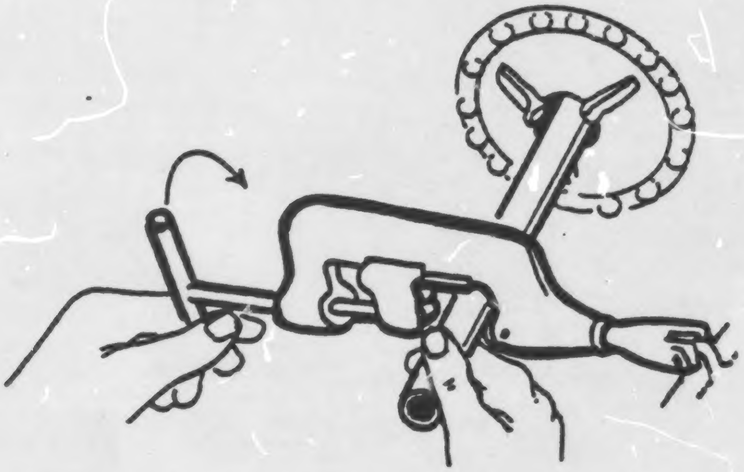
10. Flip the cutter slowly over toward you until it rests on pipe.



JOB STEPS

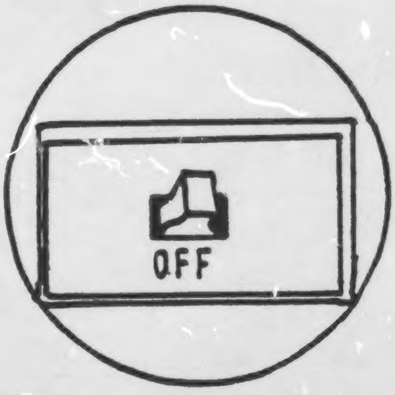
11. Open up the cutter by turning the handle counter-clockwise until the unit will slip over the pipe.

12. Slide the cutter either to the right or left so that when you tighten the handle, the wheel cutter edge lines up exactly on your pencil mark.



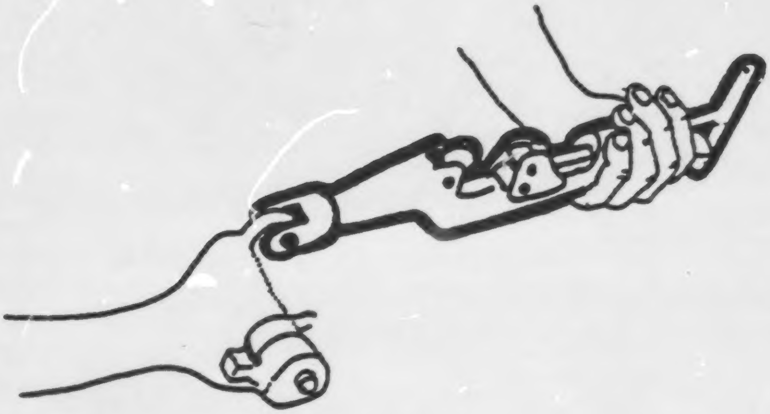
13. Put the switch on the machine in the forward position. As the pipe rotates, you gradually tighten the handle on the cutter. Turn about a quarter of a turn each time.

14. When the pipe is finally cut through and drops to the bed of the machine, shut the machine off.



JOB STEPS

15. Flip the cutter back over out of the way.



16. Remove the piece of pipe still held in the chucks.

17. Take the measured cut piece of pipe and put it in the chucks with the end that you cut sticking out of the front chuck.

18. Be sure dies are same size as pipe.

19. Put machine in forward, and put dies in closed position.

20. Slide the die-head threader back towards the front chuck. Apply pressure to die-head cutter until the rotating pipe is grabbed by threader.

21. Apply cutting oil to the area where threads are being cut.

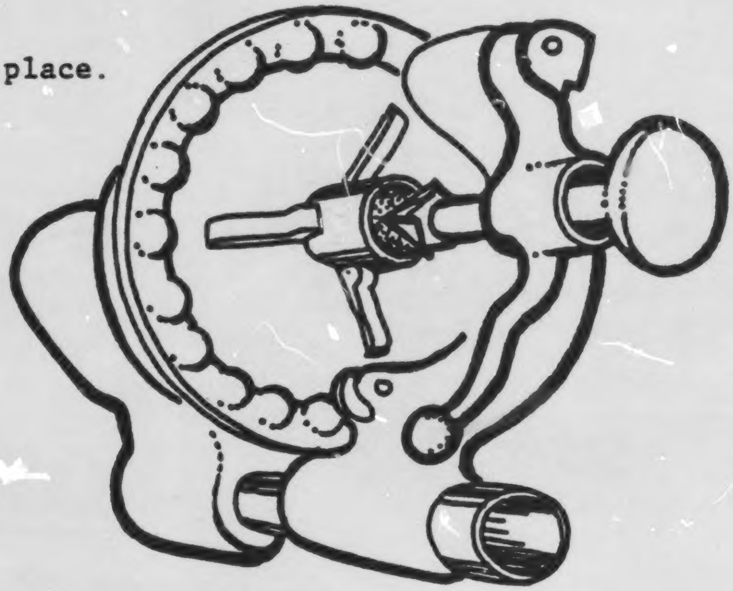
JOB STEPS

22. Stop operation of machine when you see threaded pipe end come through the die. This will be approximately 3/4 of an inch of thread.

23. Reverse machine for one revolution then release die-head and slide it off the pipe.

24. Check threads for sharpness and correct length.

25. Lock reamer in place.



26. To use reamer, run the machine in the forward position. Hold the reamer with both hands to guide the reamer into the end of the pipe. A small pressure will remove burrs and put a slight taper on the inside edge of the pipe. Turn the machine off.

27. Flip reamer out of the way and release chuck holding the pipe.

28. Remove pipe and put fitting on threads of pipe.

JOB STEPS

29. Clean up when done.

A. Remove electrical cord from power source.

B. Brush filings and metal slivers off threading dies.

C. Clean the rest of the machine.

D. Clean up the area.

building maintenance & engineering

unit: General Maintenance - Plumbing

capital area career center

module: 2201 02 027 date: level:

skill title: Use of cutting tool (Power driven)

developed & written by: Donald West

visuals by: Dave Wehrwein

WORD GUIDE

GALVANIZED - Metal coated with zinc to prevent rust.

PERFORMANCE OBJECTIVE

You Are Going To Learn:

How to cut pipe using a power driven pipe machine.

And In Order To Do This You Will Need:

A power driven pipe machine

A cutter attachment

A piece of pipe (at least 3 feet long)

Cutting oil

Gloves

We Will Know You Can Do It When:

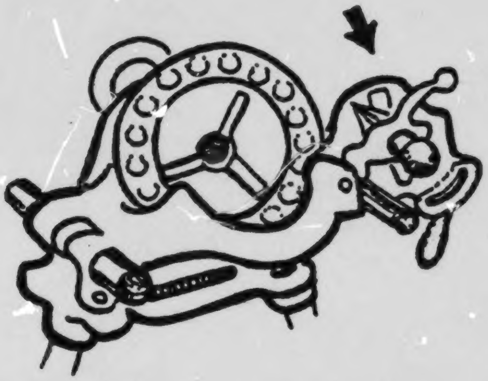
You have cut three pieces of pipe with lengths of 4 inches, 6 inches, and 8 inches, and each cut is straight across.

INFORMATION

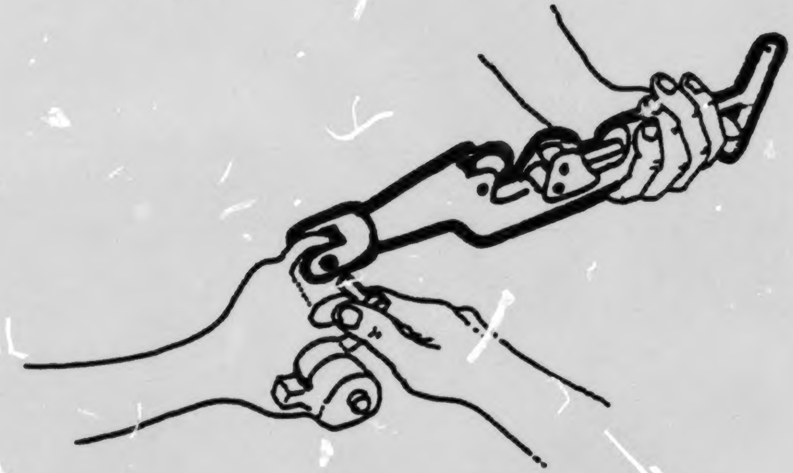
Watch the slide tape on the Threading Machine before doing the job steps.

JOB STEPS

1. Place tapering tool and threading tool in the out-of-the-way position or remove from machine.



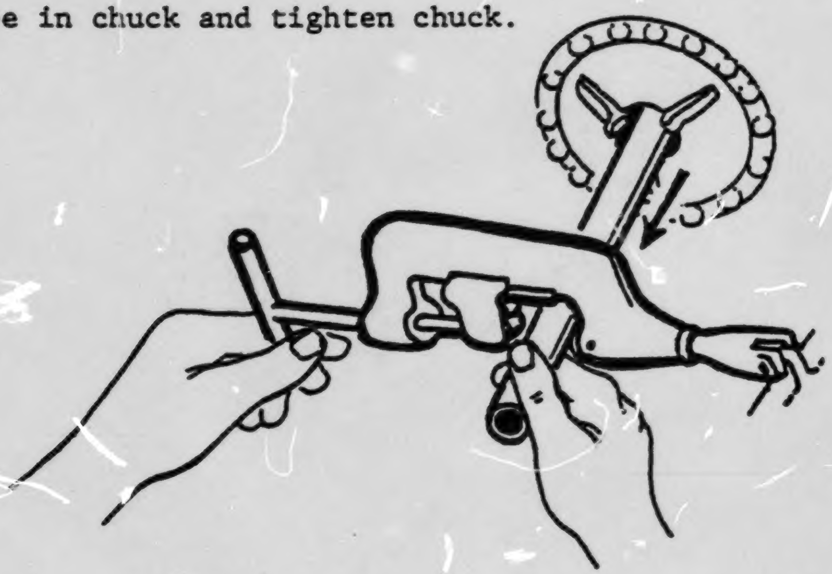
2. Install pin hinge of pipe cutter into anchor point on machine.



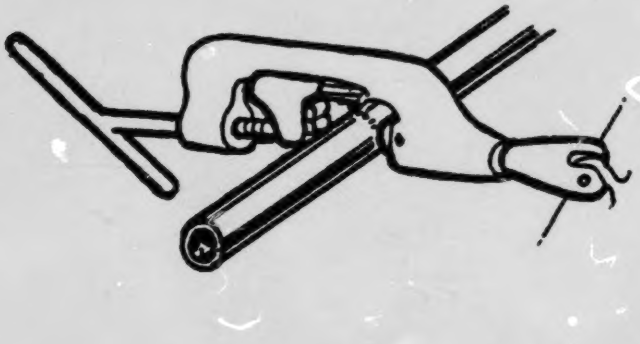
JOB STEPS

3. Open threaded screw wide enough to let pipe slide between cutter wheel and roller.

4. Insert pipe in chuck and tighten chuck.

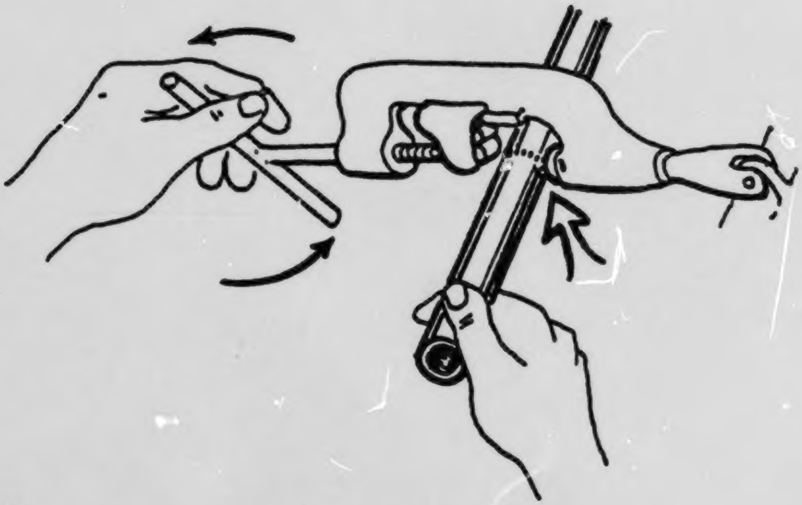


5. Measure for exact length of cut and mark it.



JOB STEPS

6. Line cutting wheel up with mark and tighten threaded screw until it makes contact with pipe.



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***********************************************************************
*                                                                     *
* CAUTION!  Do not use force on screw.  You could break the cutter    *
*           wheel.                                                    *
***********************************************************************
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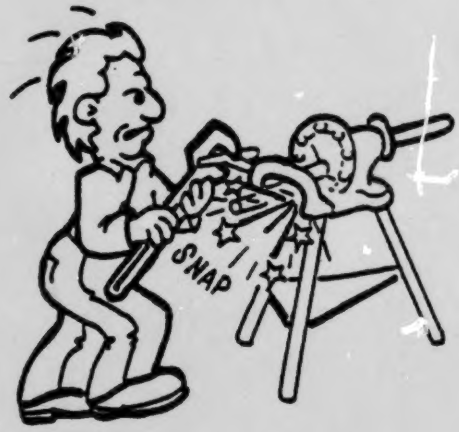
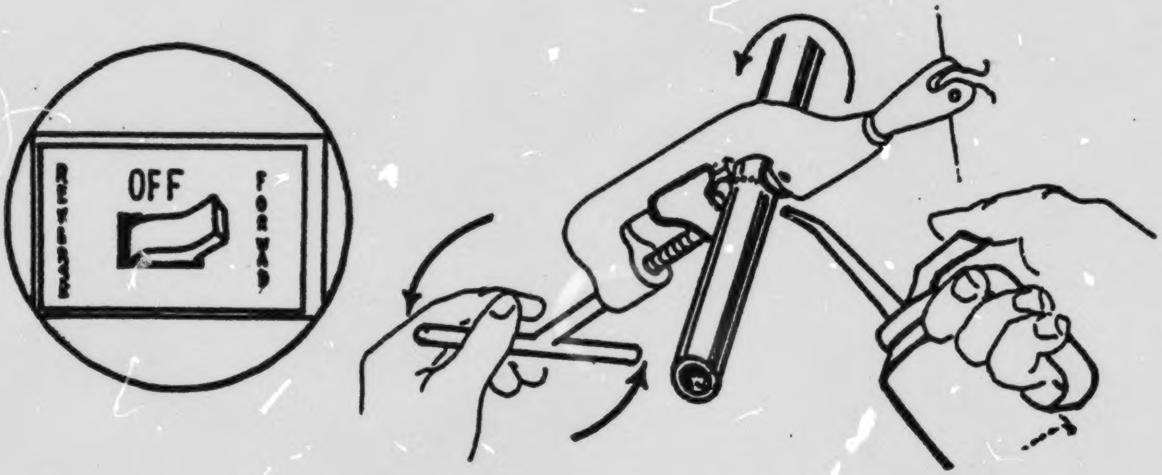
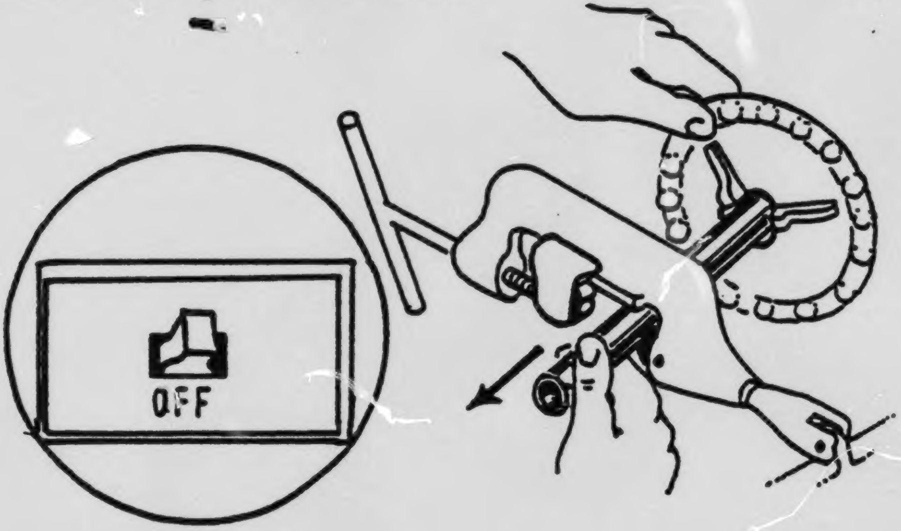


JOB STEPS

7. Push switch to forward position and turn threaded screw in slowly until pipe is cut off. Use cutting oil.



8. Shut off switch (middle position) and loosen vice grip sliding pipe out far enough for next cut.



9. Repeat above steps for other two pieces.

10. Clean up job area and put away all equipment.

building maintenance & engineering

unit: Plumbing - General Maintenance

capital area career center

module: 2201 02 022 date: 1/10/77 level:

skill title: Power Tapering of Galvanized Pipe

developed & written by: Donald West

visuals by: Dave Wehrwein

WORD GUIDE

INTERIOR - The inside of something.

PERFORMANCE OBJECTIVE

You Are Going To Learn:

How to taper the interior ends of a piece of pipe.

And In Order To Do This You Will Need:

A power driven pipe machine

A tapering tool

A piece of pipe

Gloves

We Will Know You Can Do It When:

The inside edges of pipe ends you have tapered are smooth and the thickness of the pipe wall remains the same.

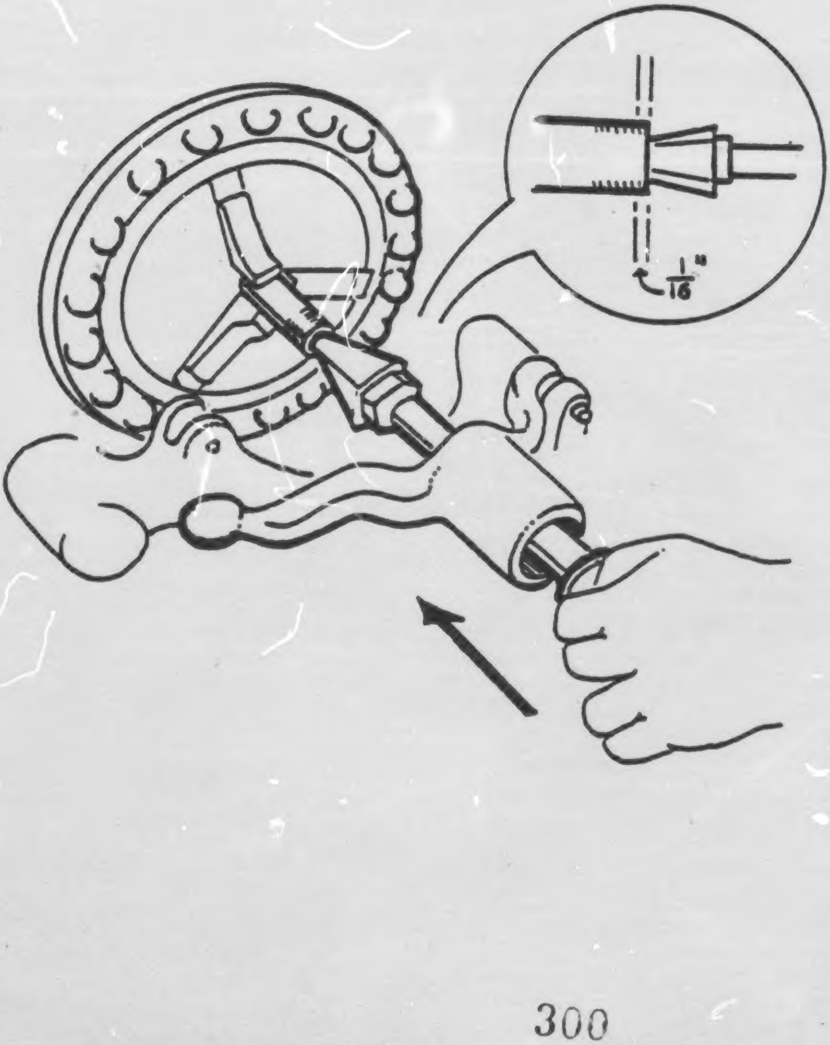
INFORMATION

Before doing the job steps, watch the slides on Tapering Pipe Edges.

CAUTION! When pushing in tapering tool, use slight pressure.

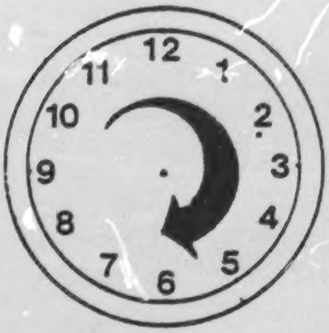
Do not push in more than 1/16th of an inch.

Otherwise you may bend out the pipe too much.



WORD GUIDE

CLOCKWISE -


12
1
2
3
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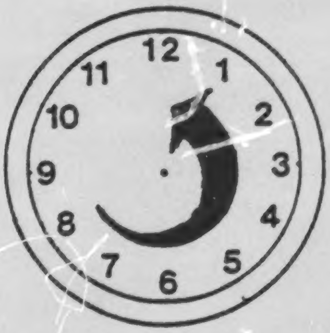
8
9
10
11

COUNTER-CLOCKWISE -


12
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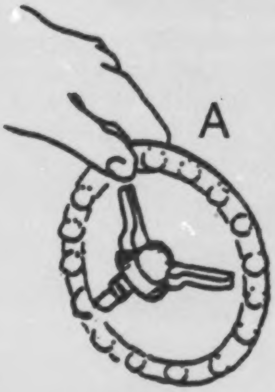
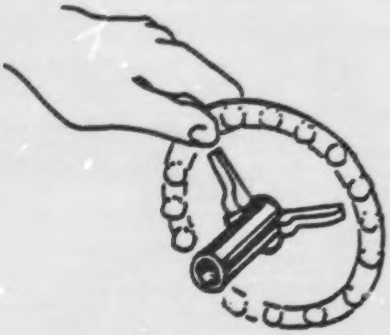
JOB STEPS

1. Loosen machine chuck by turning wheel "A" clockwise as you face the machine.

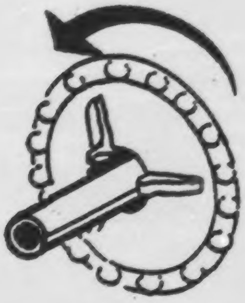


JOB STEPS

2. Place pipe into machine chuck allowing at least 4 inches to remain outside toward machine end.

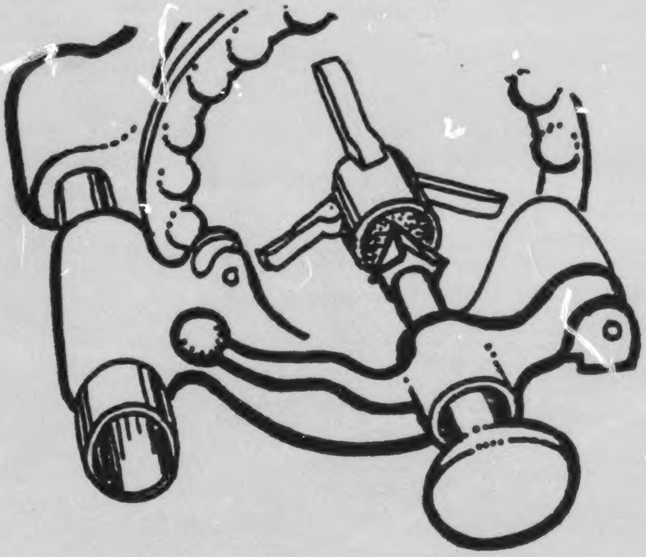


3. Turn wheel "A" counter-clockwise to tighten chuck.



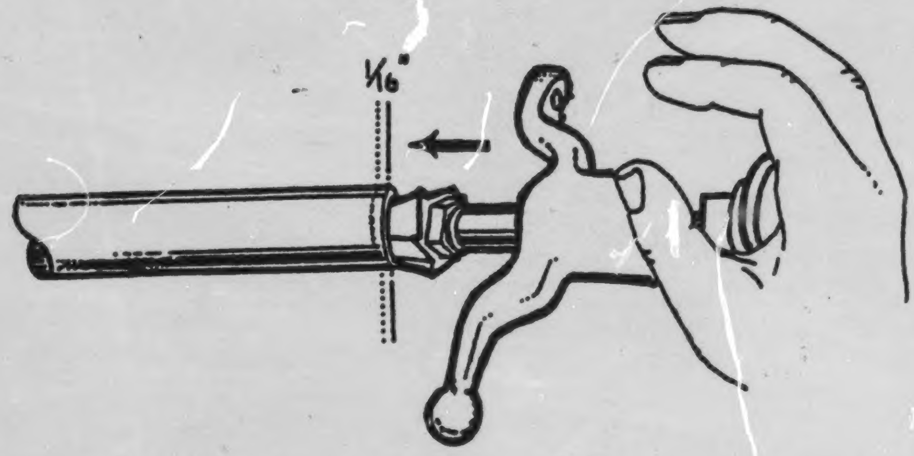
JOB STEPS

4. Place tapering tool "B" in line with pipe.



5. Turn switch on and pipe will revolve in machine chuck.

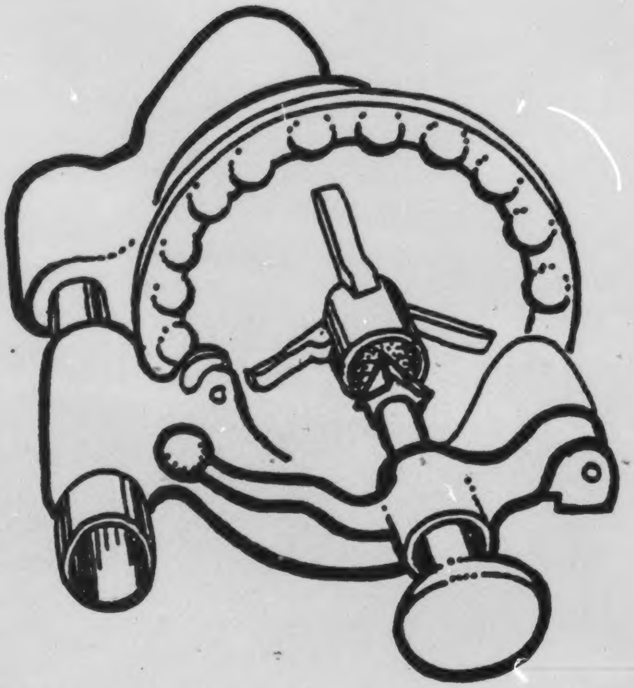
6. Gently push tapering tool into the pipe end approximately 1/16th of an inch.



JOB STEPS

7. Withdraw tapering tool and turn off electrical switch.

8. Check inside of pipe end for sharp edges. If there are any, repeat steps #5,6,7, if none appear, you are ready for threading.



9. Put away all tools.

building maintenance & engineering

unit: General Maintenance-Plumbing

capital area career center

module: 2201 02 030 date: 1/77 level:

skill title: Use of Pipe Bender

developed & written by: Donald West

visuals by: Dave Wehrwein

PERFORMANCE OBJECTIVE

You are going to learn:

How to bend pipe using a pipe bender.

And in order to do this you will need:

A piece of copper pipe at least 2 feet long.

A pipe bender rated same size as pipe diameter.

We will know you can do it when:

You have bent a pipe so that the bend is smooth and curved, without flat spots. Also, when tested with the square, the bend is 90 degrees.

WORD GUIDE

PARALLEL - In the same line or direction.

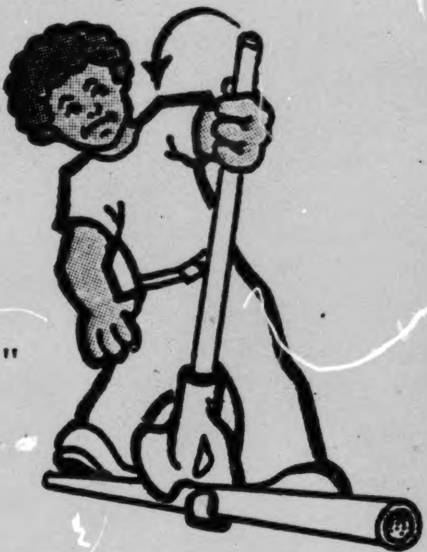
JOB STEPS

1. Place copper pipe in opening near lever "A."

2. Slide pipe in until the part where you want the bend to begin is at point "B."

3. Place pipe on the floor with bender in a vertical position.

4. Slightly push down the handle of the bender.



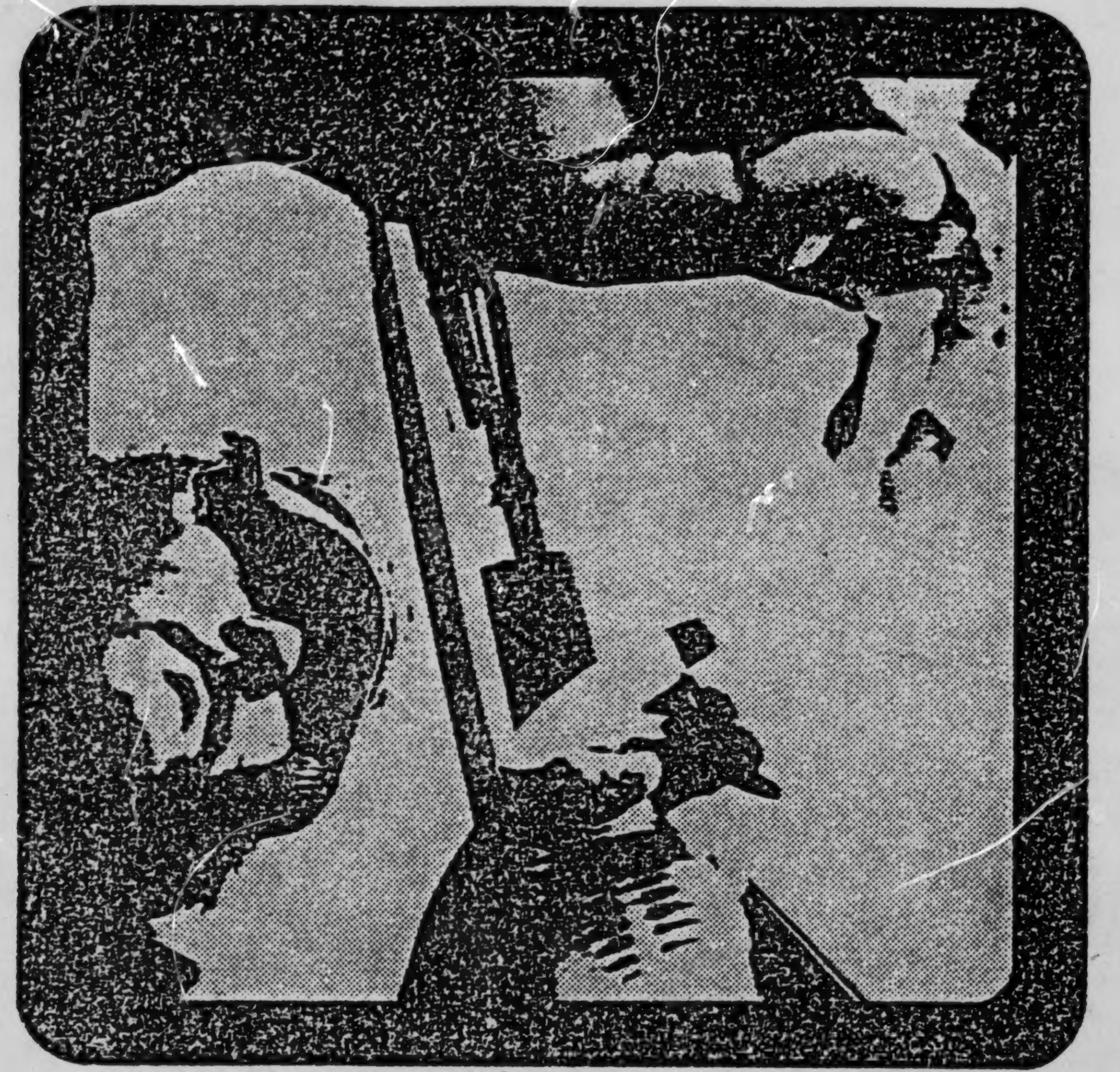
NOTE: Lever "A" should slide toward point "B."

5. Continue pushing down on the handle until pipe is bent at a 90 degree angle.

6. Pull back handle and remove pipe.

7. Check angle of pipe with a carpenter's square.

   NOTE: With short side of square and bottom bend of pipe sitting on floor, the long side of the square and the upper bend of pipe should be parallel.



building maintenance & engineering

unit: REST ROOMS

capital area career center

module: 2201 03 001 date: 1/7/77 level:

skill title: FILLING DISPENSERS

developed & written by: A. STEINBERG

visuals by: Sherri Baker

WORD GUIDE

DISPENSER	A container which holds supplies like soap, towels & cups.
SANITARY NAPKIN	An absorbent pad sometimes worn by women.

PERFORMANCE OBJECTIVE

You are going to learn:

How to check and supply all rest room dispensers.

And in order to this you will need:

Keys to dispensers

Liquid, powder, and bar soap

Toilet paper rolls

Hand towels

Sanitary napkins

Paper toilet-seat covers

We will know you can do it when:

You have filled all rest room dispensers so that they are full for the next day.

INFORMATION	MATERIALS	LOCATION OF MATERIALS
Why do you check and supply all rest room dispensers? Because hand towels, toilet paper rolls, sanitary napkins, paper toilet-seat covers, and soap are quickly used up. If you leave the dispensers empty, no one will be able to use the rest room. By checking and supplying all rest room dispensers, you prepare the rest room for everybody's use for the next day. Be sure that you have an Equipment Checklist for the Rest Rooms Unit.		

Why do rest rooms have dispensers?

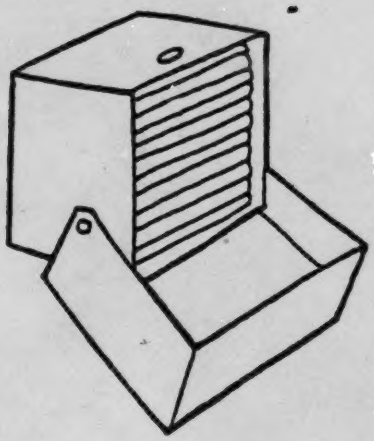
a. To keep rest rooms neat.
b. To save time.
c. To kill mice
d. To serve everybody with needed bathroom supplies.

Did you pick "d?"

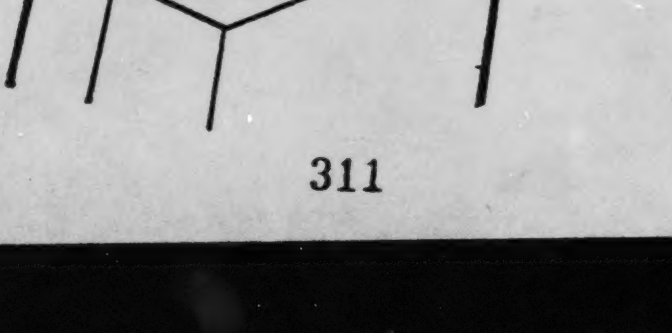
JOB STEPS

1. Collect dispenser keys and all equipment and go to your job area. Use equipment checklist to be sure you have everything you need.

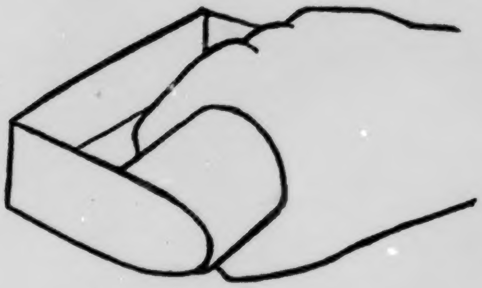
2. Using the right key, open and check all hand towel dispensers. Read the directions on each dispenser. Following directions, fill each dispenser to the top.



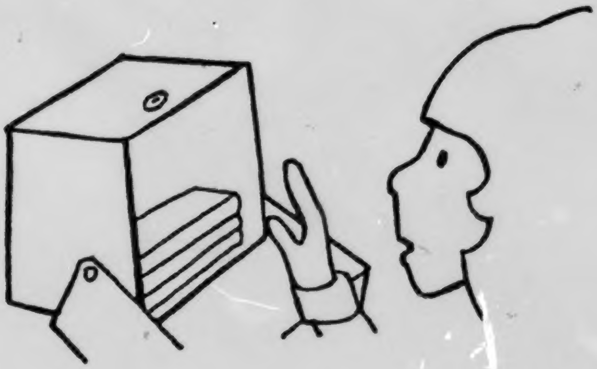
3. Close and look dispenser.



4. Using the right key, open and check all toilet paper dispensers. If there is less than ¼ of a roll left on any dispenser, replace it with a full roll. Some dispensers hold 2 rolls. In these, replace a roll only when one is empty. Close and lock dispenser.



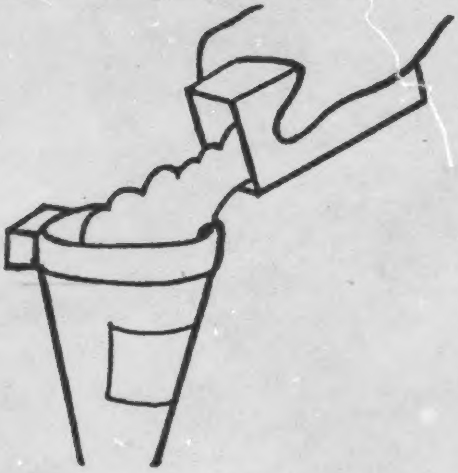
5. Using the right key, open and check all sanitary napkin dispensers. Notice the brand of napkins used in each. Read directions on each dispenser. Following directions, fill each dispenser with the right brand. Close and lock dispenser.



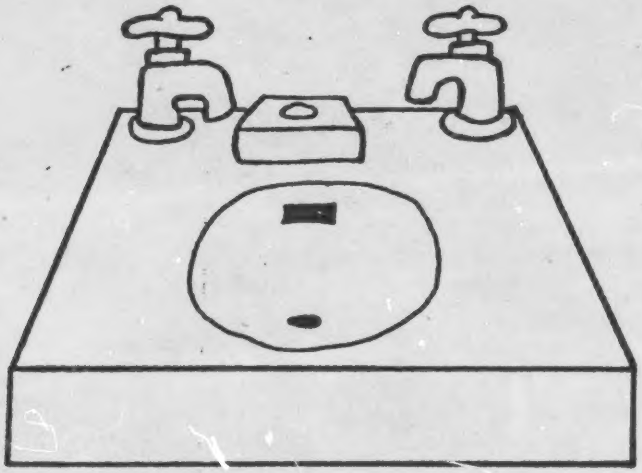
6. Open and check all paper toilet-seat cover dispensers. Read directions on each dispenser. Following directions, fill each dispenser to the top. Close the dispenser.

JOB STEPS

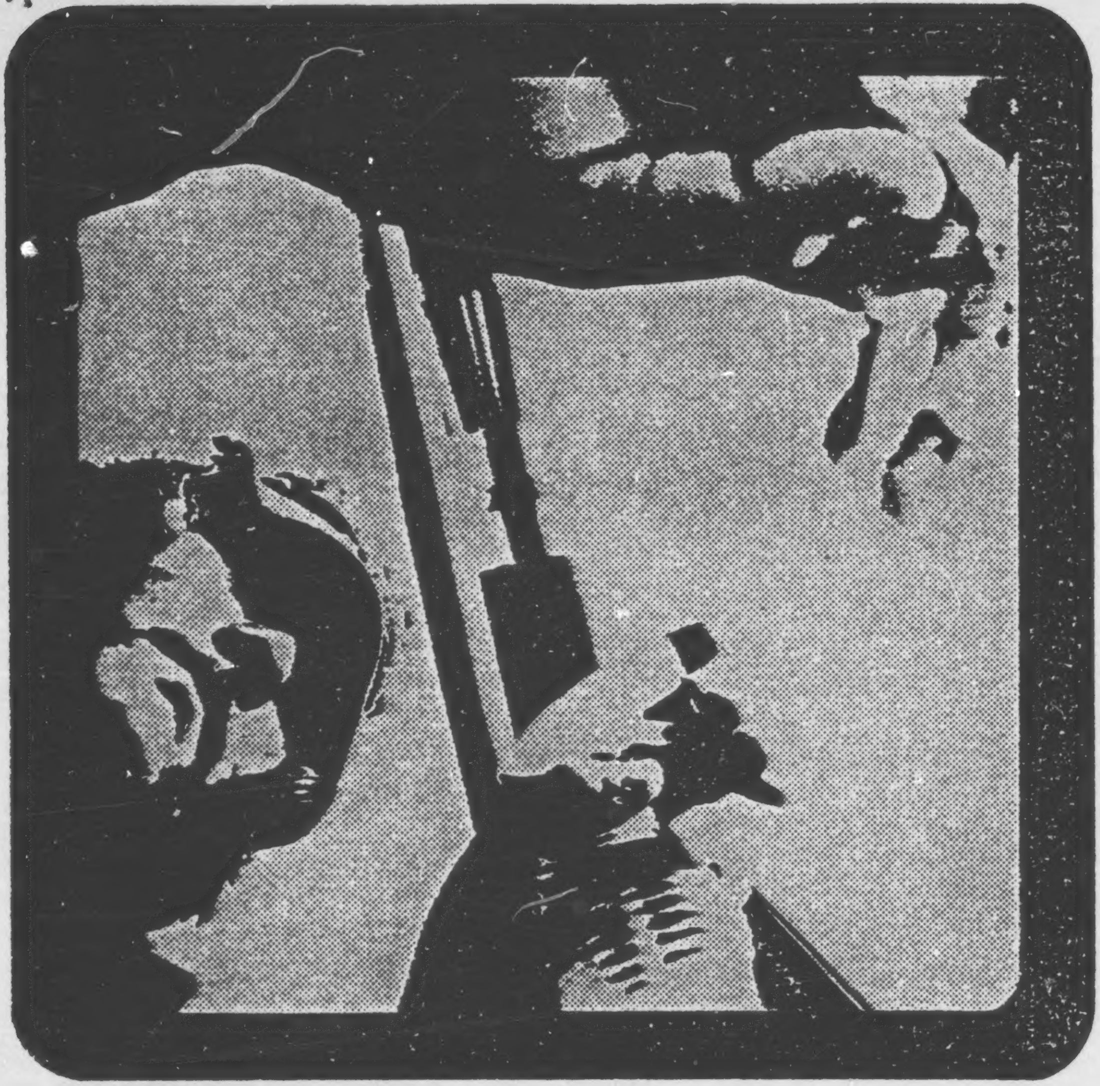
7. Open and check all hand soap dispensers. Read directions on each dispensers. Following directions, refill all liquid and powder dispensers to proper levels. Close the dispensers.



8. Check each sink for soap bars. If there is less than 1/4 of a bar left, replace it with a full bar.



9. Return all unused equipment.



building maintenance & engineering

unit: Rest Rooms

capital area career center

module: 2201 03 2 **date:** 1/4/77 **level:**

skill title: Sinks and Mirrors

developed & written by: A. Steinberg

visuals by: Sherri Baker

WORD GUIDE

SCOURING POWDER - gritty powder used to clean.

PERFORMANCE OBJECTIVE

You Are Going To Learn:

How to clean all rest room sinks and mirrors.

And In Order To Do This You Will Need:

scouring powder

glass cleaner

all-purpose cleaner-disinfectant

sponges

wiping cloths

We Will Know You Can Do It When:

You have cleaned stains, watermarks, and dirt from rest room sinks and mirrors.

WORD GUIDE

SANITARY - Free from dirt and bacteria.

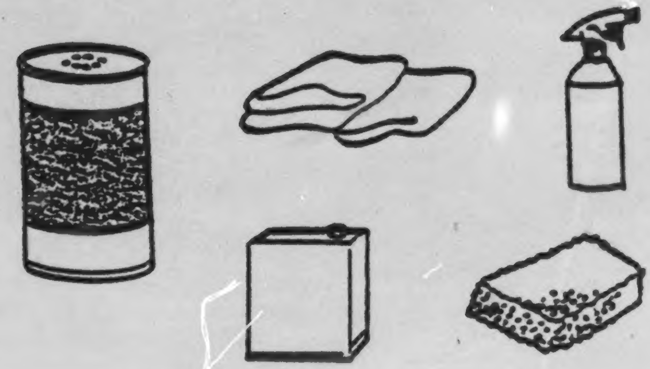
INFORMATION	MATERIALS	LOCATION
Why do you clean rest room sinks and mirrors? Because if you leave dirt, streaks, and water spots on sinks and mirrors, the sinks and mirrors will not be sanitary. By cleaning rest room sinks and mirrors, you keep them sanitary.		

WORD GUIDE

DISPENSER - A container which holds supplies like soap, towels, and cups.

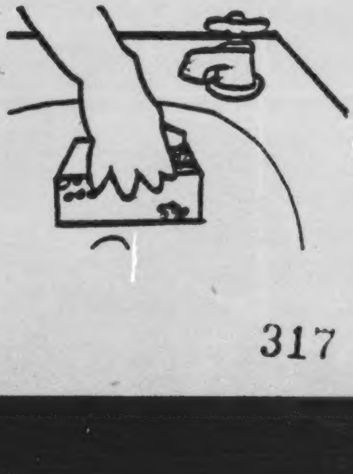
JOB STEPS

1. Collect all equipment and go to your work area.



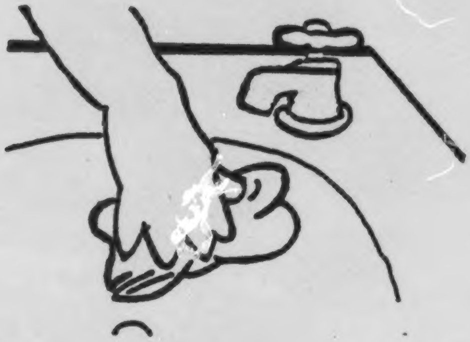
2. Pour some scouring powder into each sink and scrub with a damp sponge. Rinse sponge with water and squeeze out excess soap and water.

3. Rub sink again with damp sponge.



JOB STEPS

4. Wipe dry with a clean wiping cloth.



5. Spray some all-purpose cleaner on top and sides of sink, and then on faucet and faucet handles. Wipe dry with a clean wiping cloth.

6. If sinks are clean but still show streaks or water spots, spray with all-purpose cleaner and wipe dry with a clean wiping cloth.

7. Spray each soap dispenser with all-purpose cleaner. Wipe dry with a clean wiping cloth. Be careful not to spray walls.

8. Spray all mirrors with glass cleaner. Wipe dry with a clean wiping cloth.

9. Return all equipment. Be sure all equipment is cleaned.

1.

building maintenance & engineering

unit: Rest Rooms

capital area career center

module: 2201 03 003 **date:** 1-4-77 **level:**

skill title: Toilets and Urinals

developed & written by: A. Steinberg

visuals by: Sherri Baker

WORD GUIDE

SANITIZE - to free from dirt and bacteria.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

How to clean and sanitize rest room toilets and urinals.

AND IN ORDER TO DO THIS YOU WILL NEED:

- rubber gloves
- clean wiping cloths
- hand mirror
- all-purpose cleaner disinfectant
- a toilet bowl swab
- a rubber plunger

WE WILL KNOW YOU CAN DO IT WHEN:

You have cleaned and sanitized all rest room toilets and urinals so no spots or stains are showing and there is no odor.

WORD GUIDE

DISINFECTING - cleaning to destroy harmful germs.

INFORMATION	MATERIALS	LOCATION OF MATERIALS
Why do you clean and sanitize rest room toilets and urinals? Because dirty toilets and urinals collect germs, stains, spots and odors which make them unsanitary. By cleaning and disinfecting toilets and urinals, you can keep them clean and safe for use.		

A sanitized toilet or urinal is one that ________________.

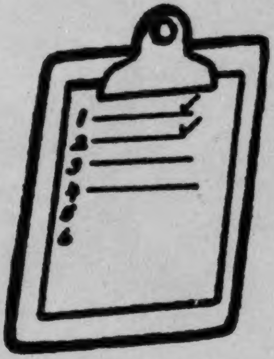
a. has just been painted.
b. has just been polished.
c. has just been boiled.
d. has just been cleaned and disinfected.

Hope you picked "d".

JOB STEPS

Cleaning Toilets

1. Collect all equipment and go to your work area. Use equipment checklist to be sure you have everything you need.



2. Put on rubber gloves.

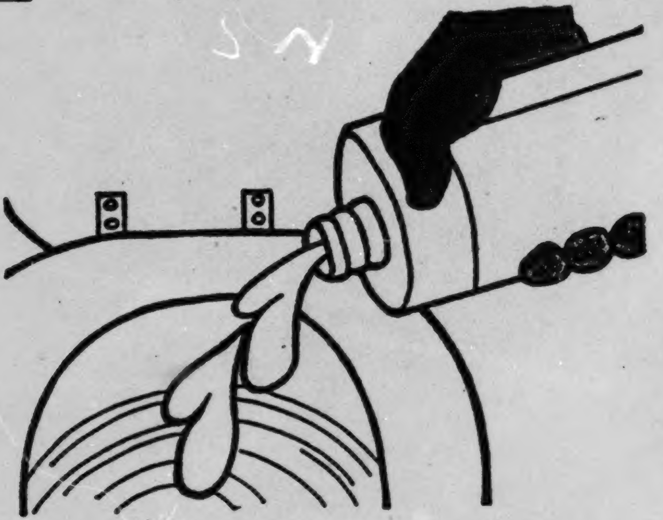
3. Flush each toilet.

WORD GUIDE

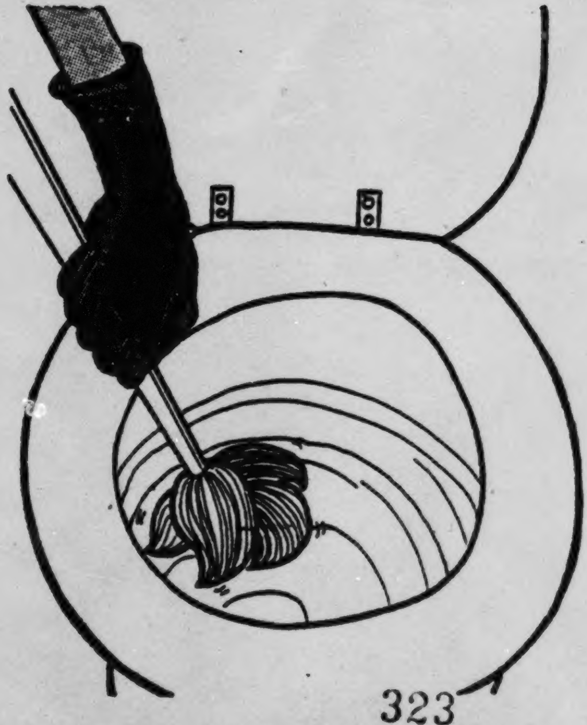
SWAB - a bit of sponge, cloth or cotton attached to a stick. Used for cleaning.

JOB STEPS

4. Pour 2 ounces of all-purpose cleaner-disinfectant into toilet bowl.



5. Using bowl swab, scrub the entire inside area. Give special attention to the underside of the rim.

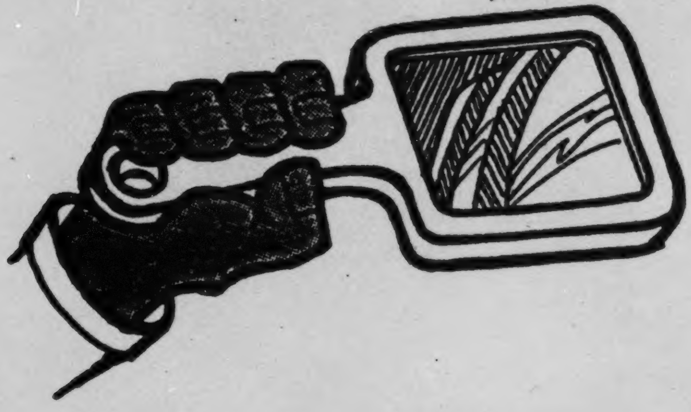


WORD GUIDE

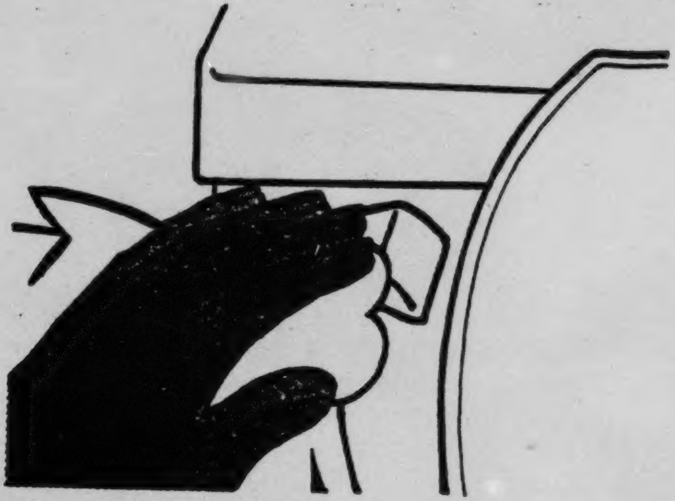
FIXTURE - something well-attached to something else, like toilet handle.

JOB STEPS

6. Check the underside of rim with a hand mirror to make sure you have left no stains or spots.



7. Wet a clean wiping cloth with all-purpose cleaner-disinfectant. Clean toilet seat and outside area of bowl. Then clean all fixtures.



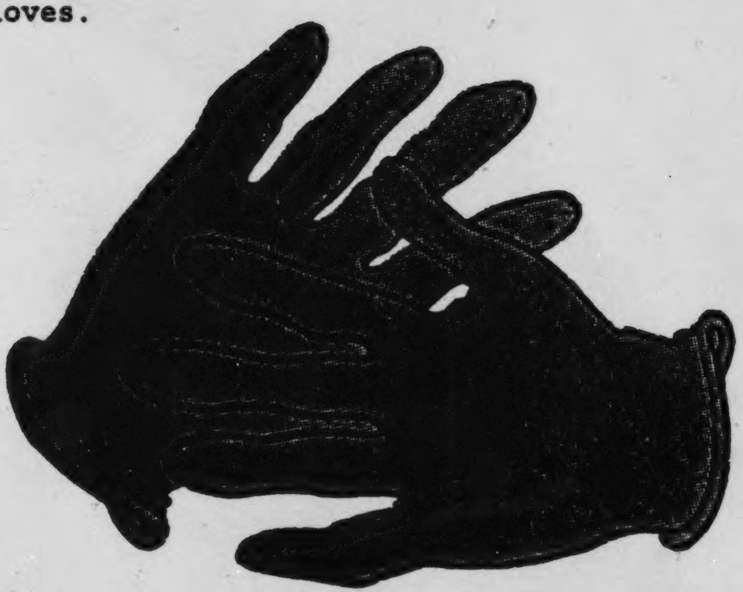
8. Using clean, dry, wiping cloth, wipe dry the toilet seat, outside of bowl and fixtures.

9. Return all equipment. Be sure all equipment is cleaned.

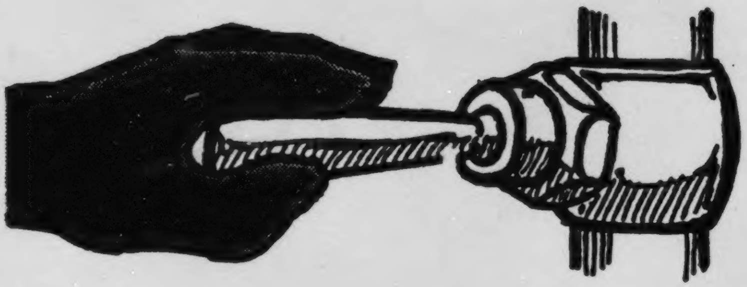
JOB STEPS

CLEANING URINALS

1. Put on rubber gloves.

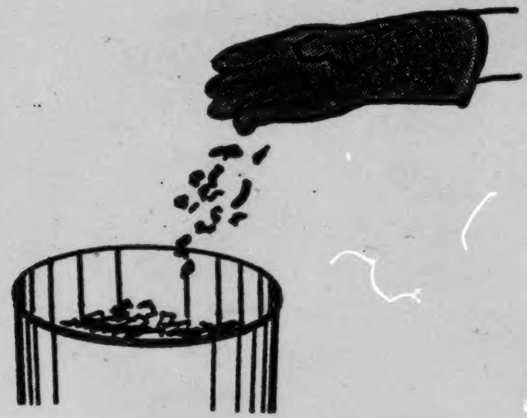


2. Flush each urinal.

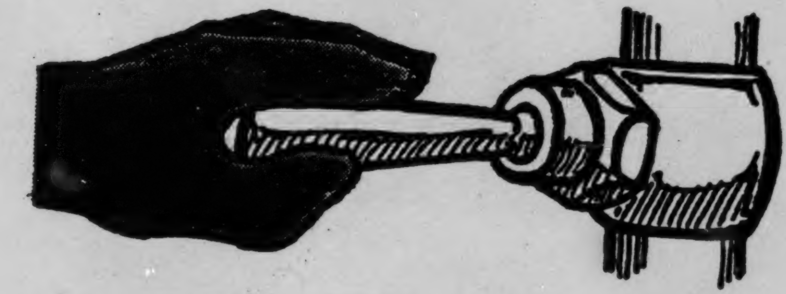


JOB STEPS

3. Take cigarettes, gum, paper and other things out of the bottom of the urinal. Throw them into the waste basket.



4. Flush each urinal again.



building maintenance & engineering

unit: REST ROOMS

capital area career center

module: 2201 03 004 date: 1/7/77 level:

skill title: CLEANING WALLS AND PARTITIONS

developed & written by: A. STEINBERG

visuals by: MARIE GOUGEON

WORD GUIDE

PARTITION - a wall that separates or divides part of a room.

PERFORMANCE OBJECTIVE

You are going to learn:

To wash and spot clean rest room walls and partitions.

And in order to do this you will need:

Pail

Spray Bottle

Sponge

Wiping Cloths

All-purpose cleaner

We will know you can do it when:

You have washed and cleaned all streaks and spots off rest room walls and partitions.

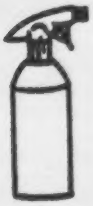
WORD GUIDE

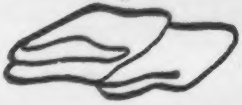
1. **SANITARY** - Clean, free from germs.

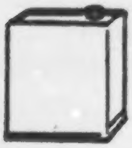
INFORMATION	MATERIALS	LOCATION OF MATERIAL
Why do you wash and spot clean rest room walls and partitions? If you leave dust, smudges, streaks, and/or water spots on rest room walls and partitons, very soon the walls will no longer be sanitary. By cleaning rest room walls and partitions you can keep them sanitary for everybody's use.		

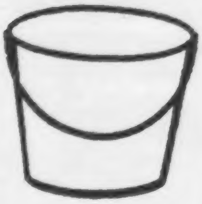
JOB STEPS

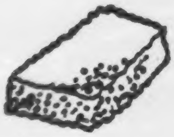
1. Get all the equipment needed for washing and spot cleaning rest room walls and partitions. Go to your job area.



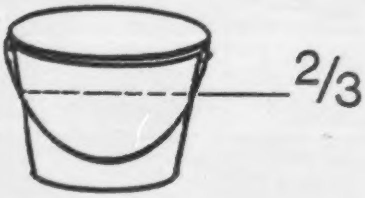




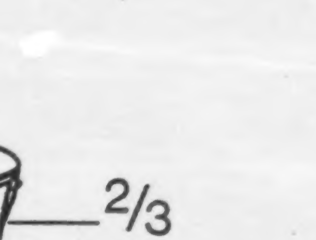




2. Fill a pail 2/3 full with warm water. Add 6 oz. of all-purpose cleaner to the water.



3. Dip a sponge into the pail and wring the sponge so it does not drip. Starting at the bottom of the wall, wash wall with short, side-to-side motions.

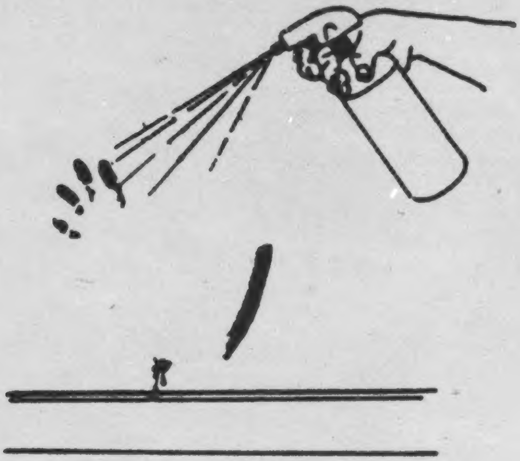


WORD GUIDE

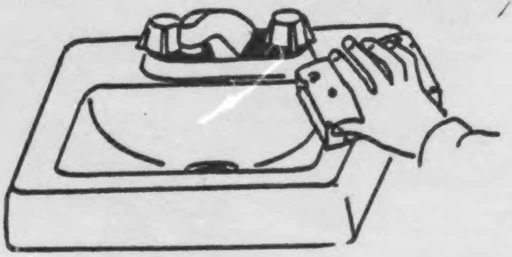
DISPENSER - A container or package to hold supplies such as paper towels or soap.

JOB STEPS

7. Spray all-purpose cleaner on the spots.



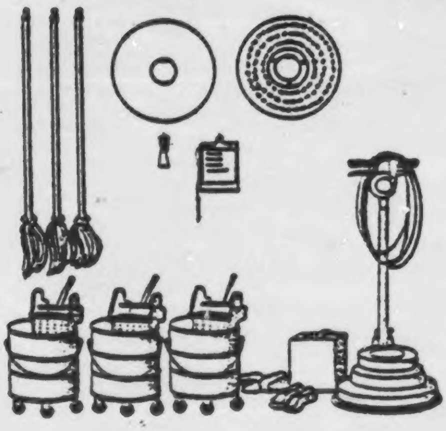
8. Wipe the spots dry with a clean wiping cloth.
9. Also spray & wipe areas around sinks, urinals, dispensers, and the backs of toilets.

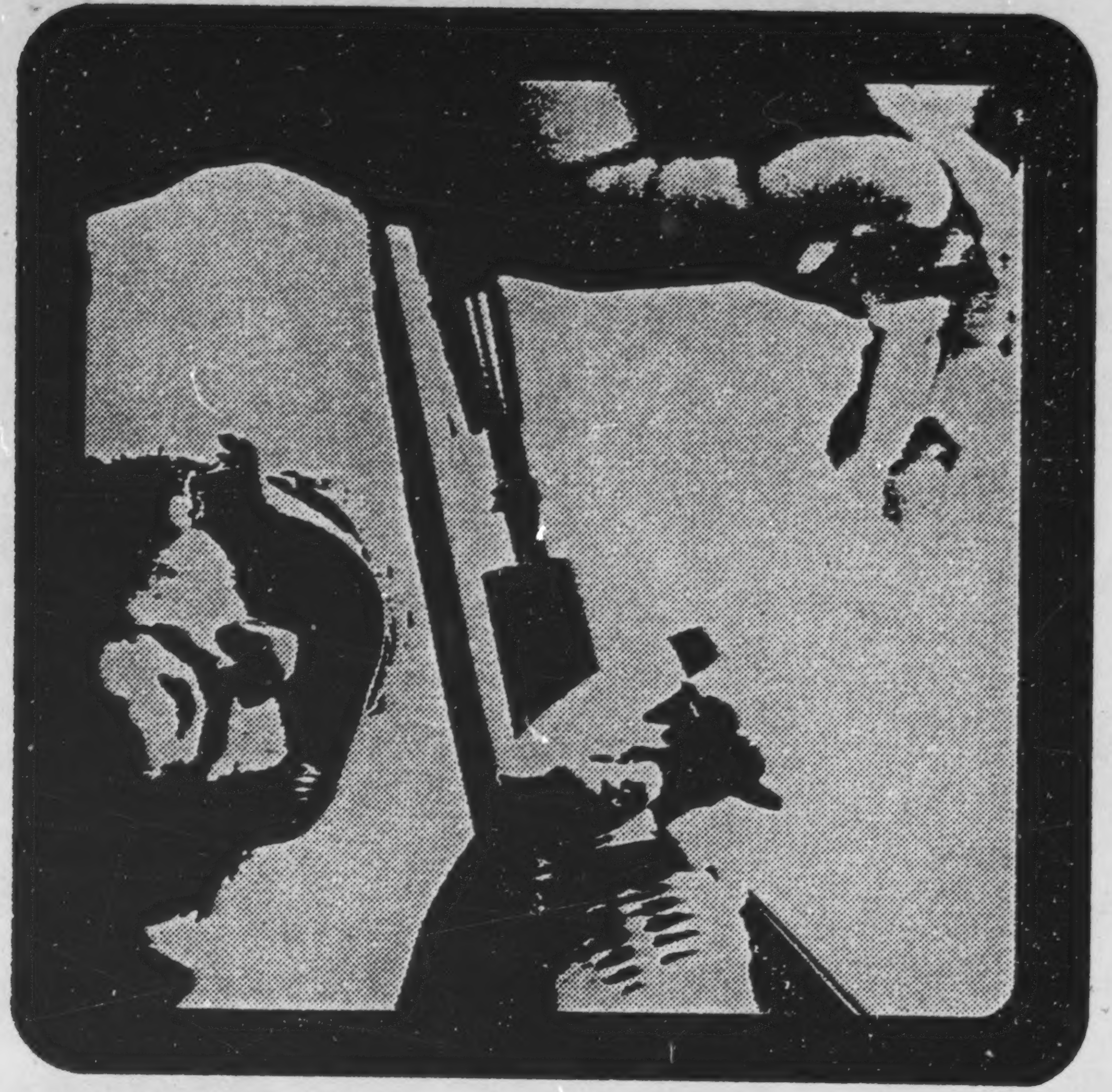


JOB STEPS

10. Use steps 3 through 8 to clean rest room partitions. If your water becomes too dirty, follow the directions in step 2. If your spray bottle is empty, follow directions in step 6.

11. Return all the equipment. Be sure all equipment is cleaned.





building maintenance & engineering

unit: Chalkboard Care

capital area career center

module: 2201 04 001 date: 1-7-77 level:

skill title: "Breaking In" a New Chalkboard

developed & written by: A. Steinberg

visuals by: Sherri Baker

WORD GUIDE

CHAMOIS - (Sham-e) - A soft cloth made from animal skins used for rubbing or buffing.

"BREAK IN" - to prepare an item for later use.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

How to "break in" a new chalkboard.

AND IN ORDER TO DO THIS YOU WILL NEED:

3 to 4 sticks of chalk

Felt eraser

Chamois or soft cotton cloth

WE WILL KNOW YOU CAN DO IT WHEN:

You have completed the job steps by "breaking in" a new chalkboard.

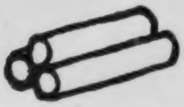
INFORMATION	MATERIALS	LOCATION OF MATERIALS
Why do you "break in" a new chalkboard: If you do not "break in" a new chalkboard, the writing on the board will not erase completely. By "breaking in" a new chalkboard, you can be sure the writing on the board will erase completely.		

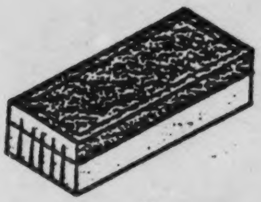
WORD GUIDE

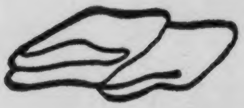
SURFACE - the outer face of a thing.

JOB STEPS

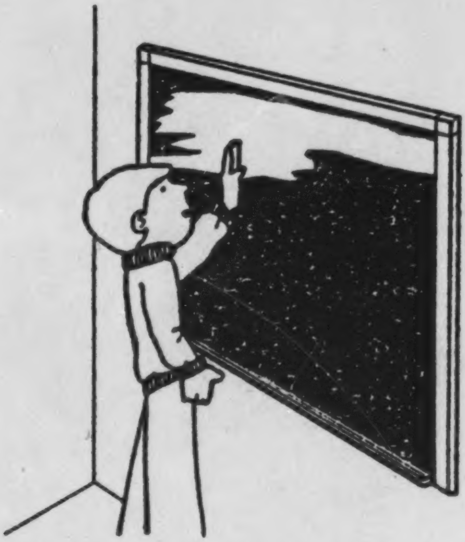
1. Collect the necessary equipment for "breaking in" a new chalkboard and go to your job area.







2. Using the side of a piece of chalk, cover the entire surface of the board with chalk.

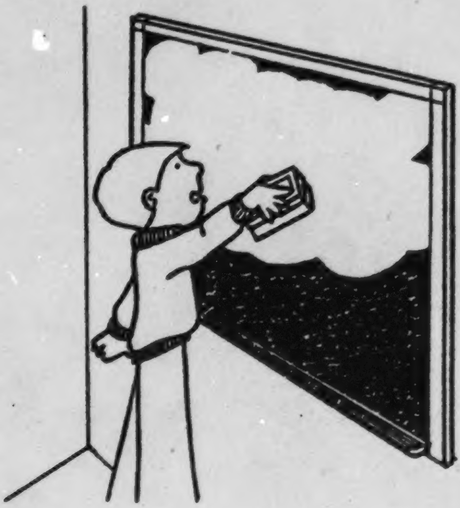


WORD GUIDE

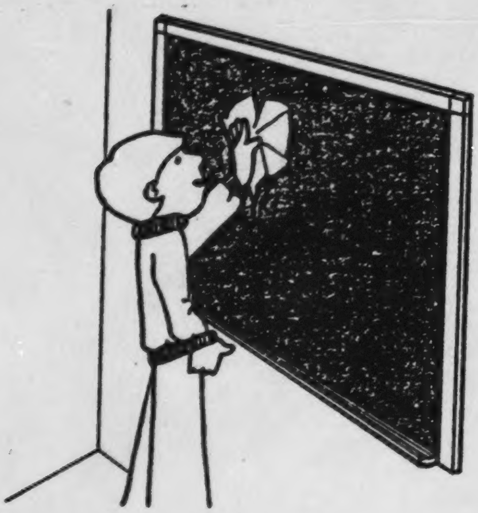
CIRCULAR MOTION - moving in a circle.

JOB STEPS

3. Using the eraser, make circular motions working the chalk into the entire surface of the board.



4. Using the chamois or cotton cloth, rub the entire surface of the chalkboard.



5. Repeat steps 2, 3, and 4.

6. When "breaking in" the new chalkboard, do not leave the chalk on the surface over night.

JOB STEPS

7. Do not wash the chalkboard for at least a week.

s X	m X	t X	w X	t X	f X	s X

8. Return all equipment. Be sure all equipment is cleaned.

building maintenance & engineering

unit: Chalkboard Care

capital area career center

module: 2201 04 002 **date:** 1-7-77 **level:**

skill title: Washing a Chalkboard

developed & written by: A. Steinberg

visuals by: Sherri Baker

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

To wash a chalkboard.

AND IN ORDER TO DO THIS YOU WILL NEED:

Sponge

Felt Eraser

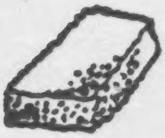
WE WILL KNOW YOU CAN DO IT WHEN:

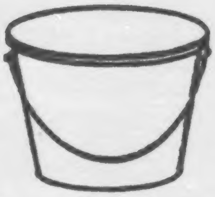
You washed a chalkboard so that it is clean and without streaks.

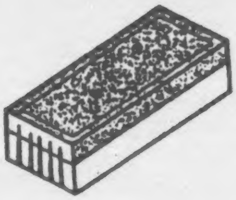
INFORMATION	MATERIALS	LOCATION OF MATERIALS
Why do you wash a chalkboard? Because old chalk must be removed from the chalkboard. Erasing the board with a felt eraser will not clean all of the chalk off the board. When you wash a chalkboard, new chalk writing will show up more clearly on a clean board.		

JOB STEPS

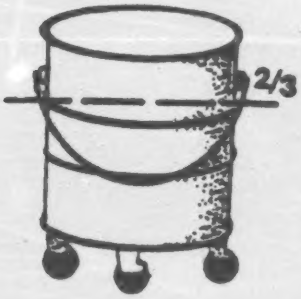
1. Collect the necessary equipment for washing a chalkboard, and go to your job area.



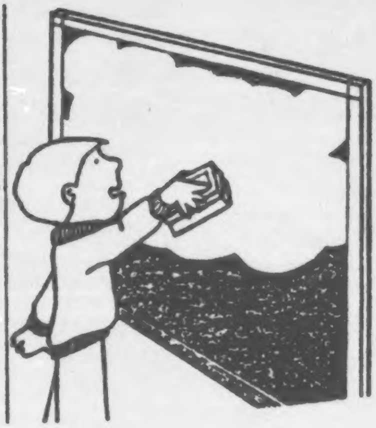




2. Fill a pail 2/3 full with cold water.

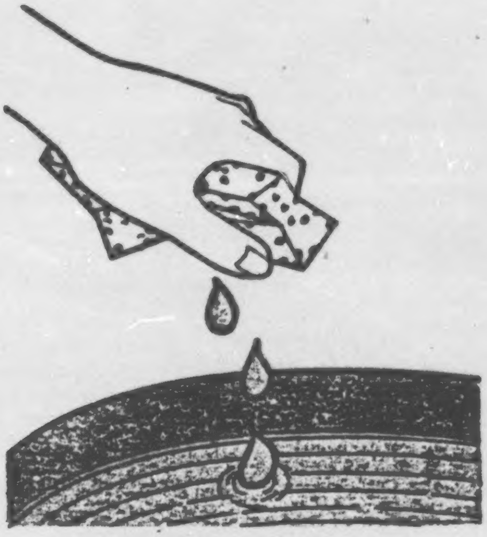


3. Erase the entire chalkboard with a felt eraser.

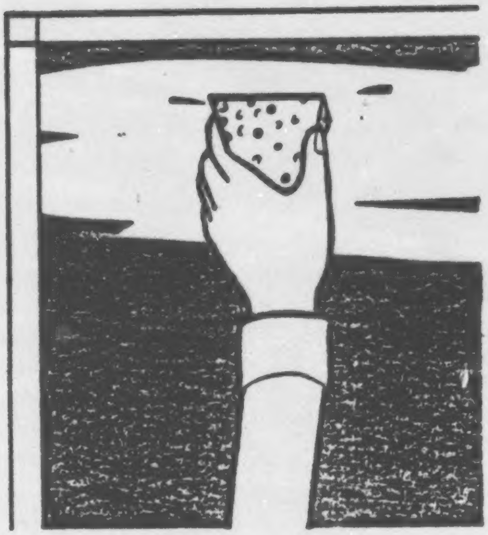


JOB STEPS

4. Dip sponge into water and wring it out until almost dry.

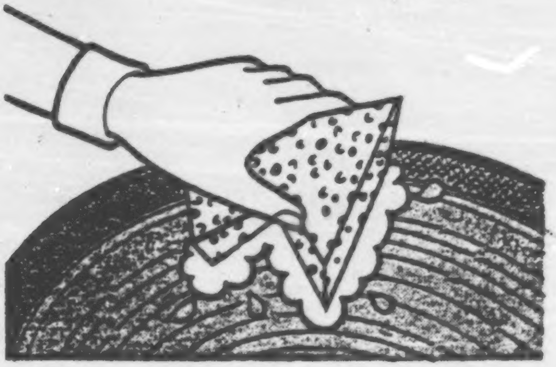


5. Start at the top left-hand corner of the board. Moving across the top of the board, from left to right, in a straight line, wipe the chalkboard.



JOB STEPS

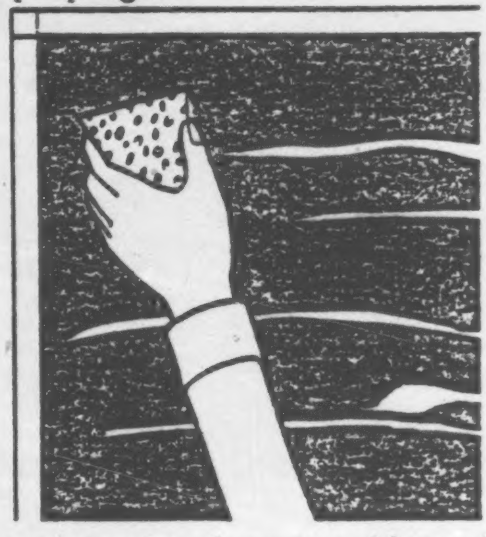
6. When your sponge becomes dirty with chalk, wet the sponge and clean out the dirt. Continue with Step 5 until the entire board is clean. You may need to change your water often.



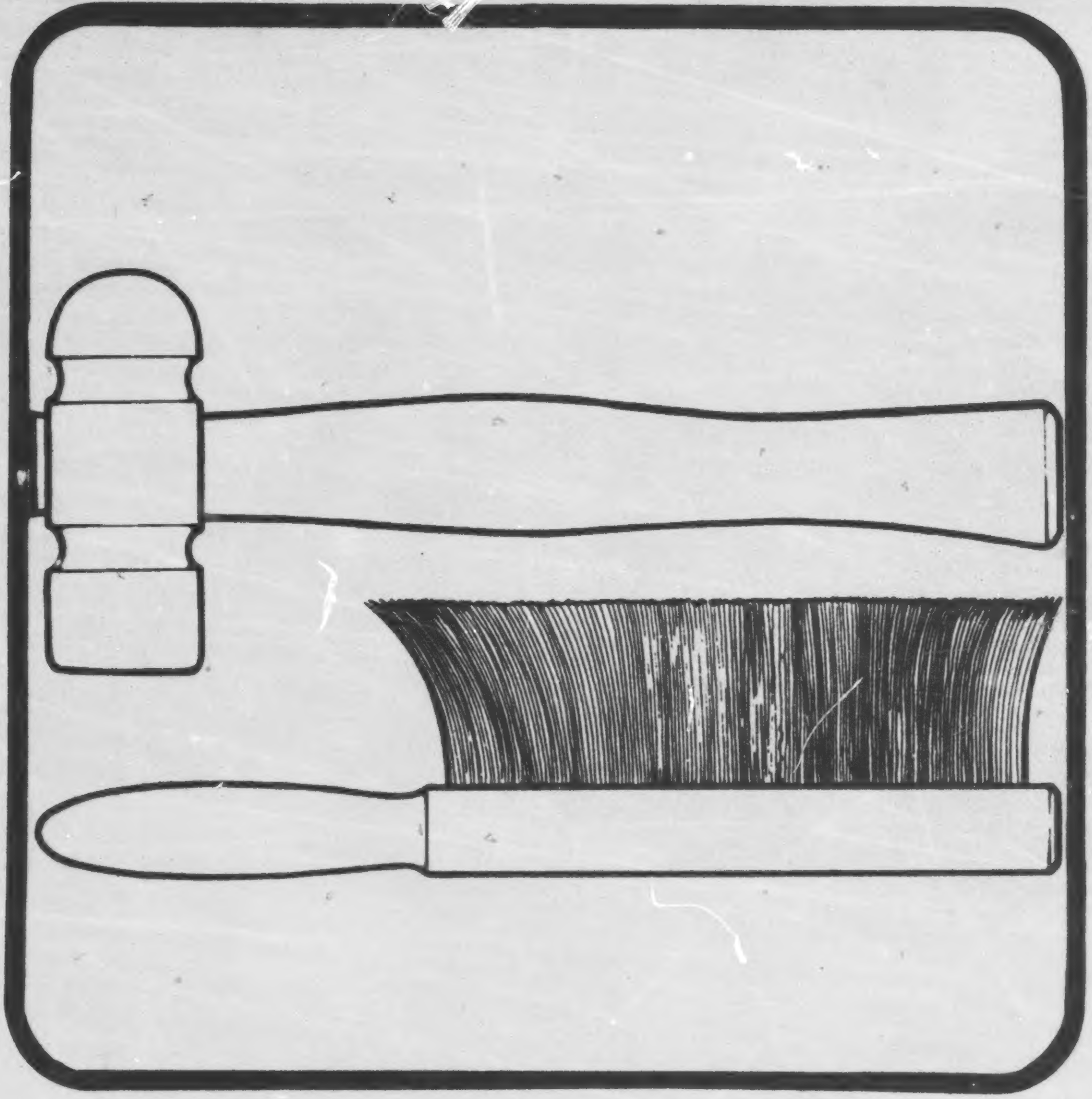
7. Wash the chalk tray with a damp sponge.

8. After the chalkboard dries, check it to see that it has no streaks.

9. If streaks remain, go over the streaks, in a straight motion, with a clean, damp sponge.



10. Return all equipment. Be sure all equipment is cleaned.



building maintenance & engineering

unit: Restrooms

capital area career center

module: 2201.03 005 **date:** January 1977 **level:**

skill title: Complete Care of Rest Rooms

developed & written by: A. Steinberg

visuals by:

WORD GUIDE

DISINFECTED - Cleaned free of germs.

INSPECT - Check.

PERFORMANCE OBJECTIVE

You are going to learn:

How to fully clean and inspect a rest room each day for one week.

And in order to do this you will need:

- A pushbroom
- A dust pan
- A bench brush
- Swabs
- Glass cleaner
- A mop
- Sponges
- Wiping cloths
- Sanitary Napkins
- 2 mop pails
- 1 mop wringer
- All-purpose cleaner-disinfectant
- Liquid and powder soap
- Bars of soap
- Paper hand towels
- Paper toilet rolls
- Paper toilet-seat covers

We will know you can do it when:

Within one hour, you have cleaned and disinfected floors, walls, ceilings, sinks, mirrors, toilet bowls, and urinals, checked and filled all rest room dispensers.

INFORMATION

See modules you have completed as follows:

Module 2201 03 001 - Filling Dispensers

Module 2201 03 002 - Cleaning Sinks and Mirrors

Module 2201 03 003 - Cleaning Toilets and Urinals

Module 2201 03 004 - Cleaning Walls and Partitions

Module 2201 08 001 - Paper and Trash

Module 2201 08 002 - Disposal of Paper and Trash

Module 2201 08 004 - Mop to Disinfect

Now Do:

Watch and listen to the slide tape for this module. You will learn how to fully clean a rest room.

When you have finished the slide tape, continue this module by turning to the next page.

WORD GUIDE

DISPOSE - To get rid of, to throw away.

JOB STEPS

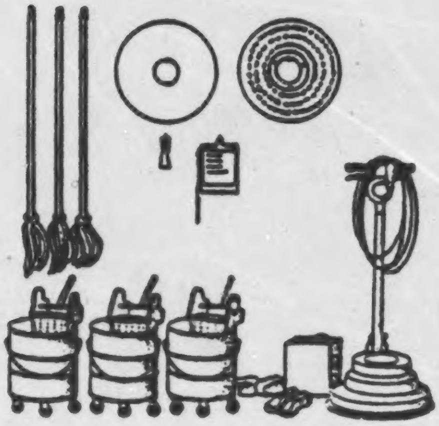
1. Put together all equipment that you will need to fully clean a rest room.
2. Go to your work area with your equipment.
3. Put a "DO NOT ENTER" sign up by the entrance door.
4. Sweep floor area with push broom.
5. Pick up dirt with bench brush and dust pan.
6. Dispose of dirt into wastebasket.
7. Wash ceilings (if this is possible), walls, and partitions.
8. Clean sinks and mirrors.
9. Check and fill all soap dispensers. Be careful to put powdered soap in dispensers for powdered soap only.
10. If there are no soap dispensers, replace old soap bars with new ones. If any sink has no bar of soap, put a new bar on this sink.
11. Check and fill all dispensers for hand towels, paper toilet rolls, paper toilet-seat covers or sanitary napkins.
12. Clean and flush all urinals and toilets.
13. Wash the outside of all urinals and toilets.
14. Mop floor with the disinfectant solution.

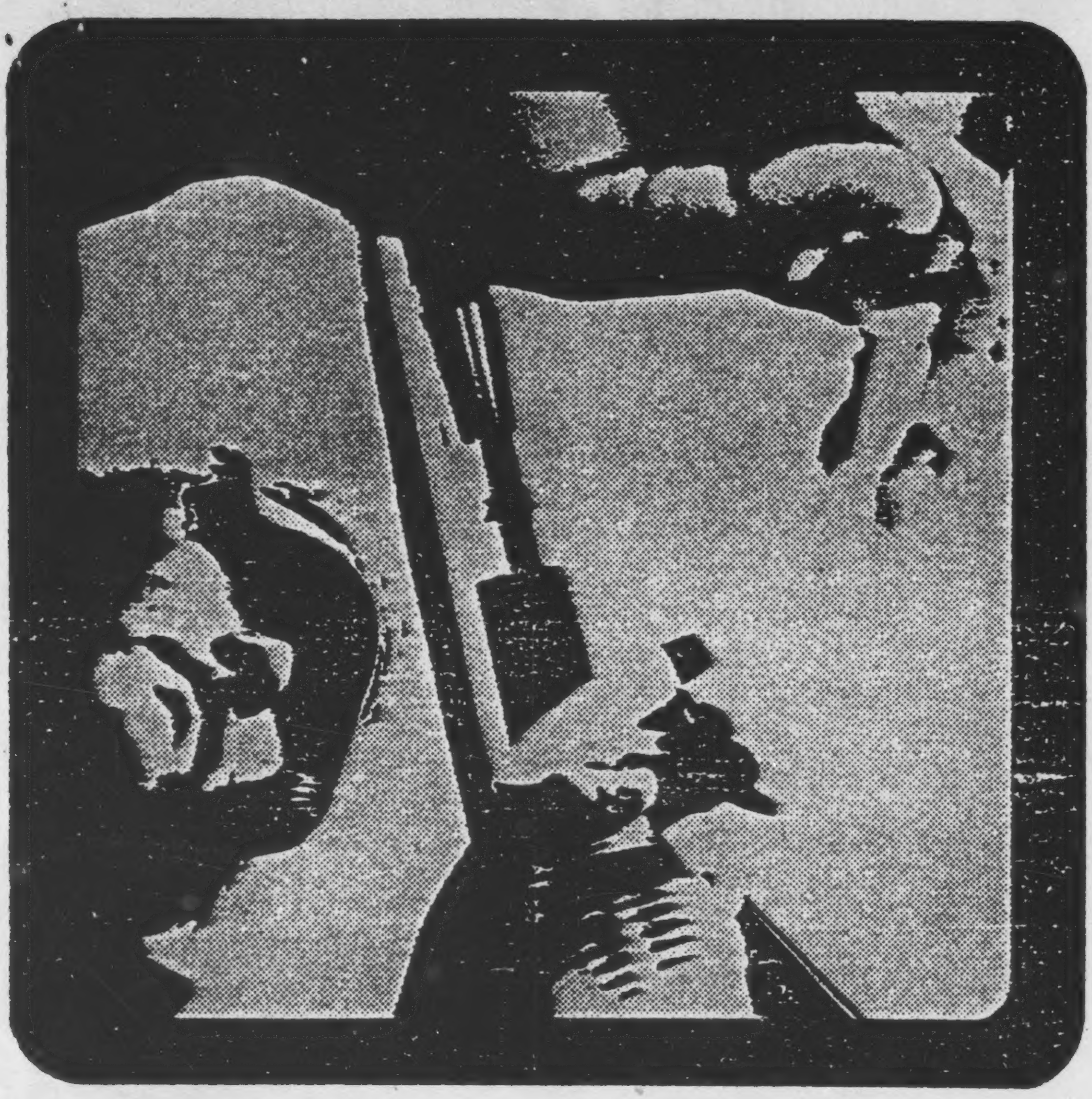
JOB STEPS

15. If you have moved wastebaskets, put them back in their places.

16. Remove sign by the entrance door.

17. Return all equipment. Be sure all equipment is cleaned.





building maintenance & engineering

unit: Carpet Care

capital area career center

module: 2201 05 1 date: 12-6-76 level: 2

skill title: Shampooing carpets (DRY FOAM)

developed & written by: Dwight Smith

visuals by: Sandra Starnaman

WORD GUIDE

DRY FOAM SHAMPOO - carpet cleaner that does not soak the carpet or rug.

PILE - the yarns of a carpet.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

To shampoo a carpet with the dry foam method.

AND IN ORDER TO DO THIS YOU WILL NEED:

self-propelled dry foam shampoo machine

dry foam shampoo

12 quart pail

short bristled brush

upright vacuum cleaner

carpet brush

wet vacuum

WE WILL KNOW YOU CAN DO IT WHEN:

You have cleaned all the dirt from a carpet and the pile has been lifted to the same height.

The pile of a carpet is ______________________.

a. a heap of dirt on a carpet.
b. the yarns of the carpet.
c. the backing of a carpet.
d. the color of a carpet.

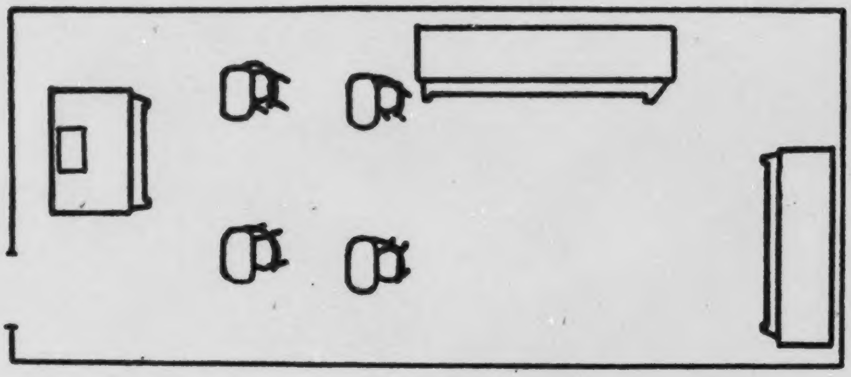
Answer: b

INFORMATION	MATERIALS	LOCATION OF MATERIALS
Why dry foam shampoo a carpet? To remove embedded dirt and raise the pile. This helps the carpet look better and last longer. NOW DO: Read the information above. Get all the equipment listed on page 1. Use an Equipment Checklist for the Carpet Care Unit. After you have all the equipment turn the page and begin the job steps.		

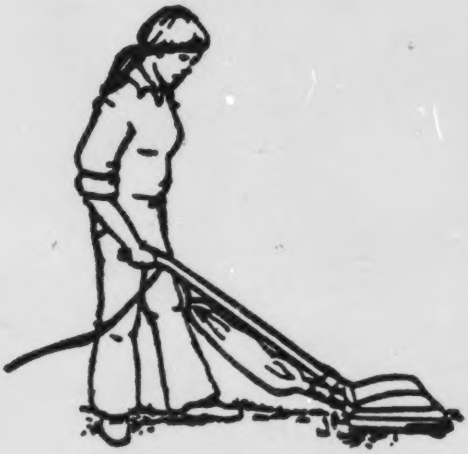
JOB STEPS

1. Check the time. The carpet will need 12 hours to dry before people can walk on it.
2. Bring all the equipment to the work area.
3. Make a map of all furniture in the room.

   Example:

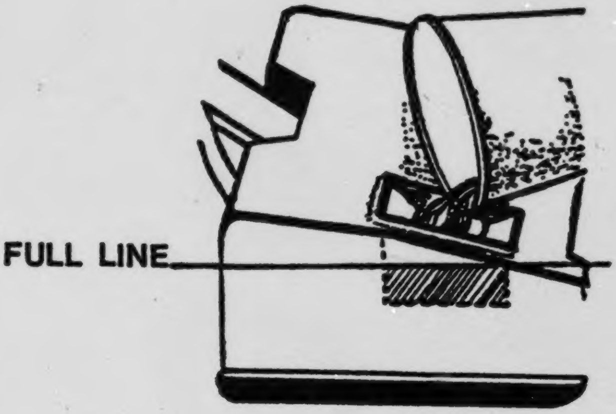


4. Move all the furniture away from the area you will shampoo.
5. Vacuum the carpet completely. (see module on vacuum cleaning #2201 05 3).



JOB STEPS

6. Fill pail with warm water. Fill shampoo machine with warm water from the pail up to "full level". Add shampoo according to instructions on the package.



7. Adjust brush height according to directions from your instructor.

8. Put the machine along the baseboard of one side of the room.

9. Push the "Foam" button on the right handle, then let it go. The longer you hold it in, the wetter your floor. Do not make the floor too wet.

10. Push the "Power" button on the left handle to make the brushes turn.

11. Push the machine along the wall to the end of the room. Let go of the "Power" button.

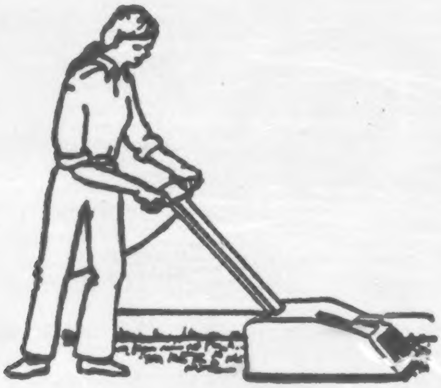
12. Raise the front of the machine a few inches by pushing down on handles.

13. Repeat steps 9 through 12 until you have shampooed the entire area. Be sure to overlap about 4 inches.

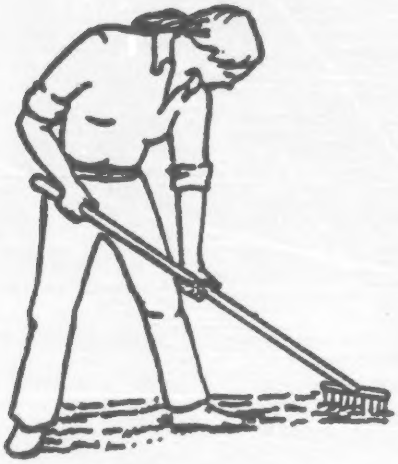
JOB STEPS

14. Use the short bristled brush to clean the corners.

15. Wet vacuum the entire carpet.



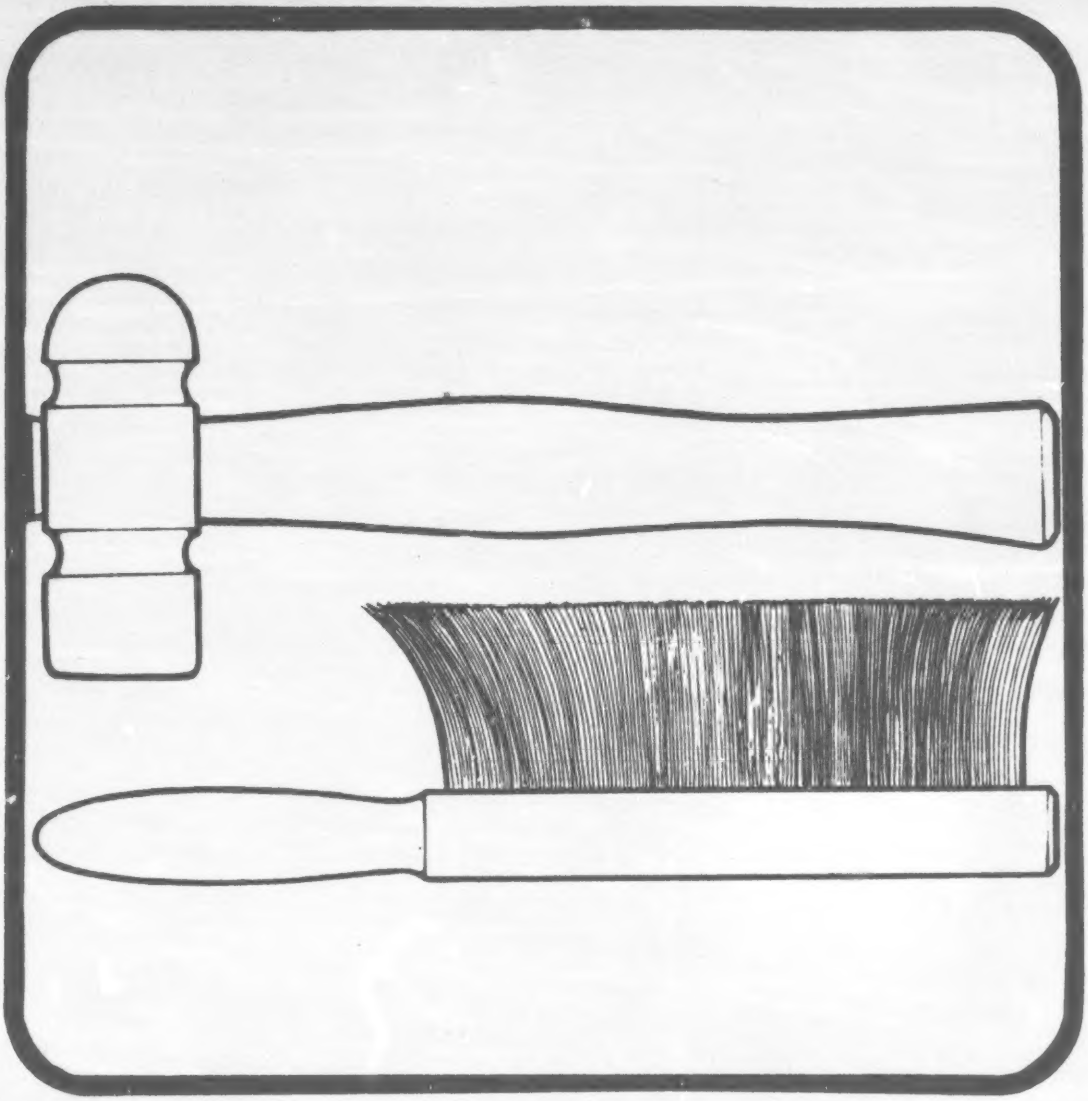
16. Using the carpet brush, rake the pile up. Rake all the carpet in the same direction until the pile is raised.



17. Clean all the equipment and return it to the storage area.

18. The carpet must dry for 12 hours before using.

19. Ask your instructor to inspect the carpet area.



building maintenance & engineering

unit: Carpet Care

capital area career center

module: 2201 05 002 **date:** December 1976 **level:** 2

skill title: Shampooing Carpet with Rotary Machine

developed & written by: Dwight Smith

visuals by:

WORD GUIDE

PILE - the yarns of a carpet.

ROTARY SHAMPOO TANK - container on shampoo tank that holds cleaning solution.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

How to shampoo a carpet with a rotary machine.

AND IN ORDER TO DO THIS YOU WILL NEED:

- rotary carpet shampoo machine
- wet vacuum
- shampoo
- carpet spot cleaner
- 10 2" x 2" cardboard plastic
- upright vacuum cleaner
- pencil and paper

WE WILL KNOW YOU CAN DO IT WHEN:

You have cleaned a carpet, and the pile stands up the same height.

Quiz yourself:

A Rotary Shampoo Tank is ________________.

a. a round army tank.
b. great for washing your tank.
c. a container for holding cleaning solution.
d. for shampooing goldfish.

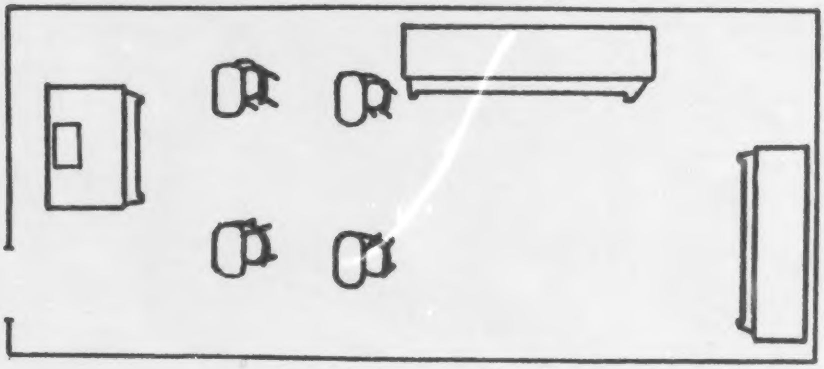
Answer: c

INFORMATION	MATERIALS	LOCATION OF MATERIALS
You will need an Equipment Checklist for the Carpet Care Unit.	Equipment Checklist	

JOB STEPS

1. Get your equipment. Use your checklist to be sure you have everything you will need. Bring your equipment to the work area.

2. Make a map of the furniture in the area you will shampoo.



3. Move all the furniture out of the area.

4. Use the spot cleaner on any stain you can see. (See module 2201 05 004).

5. Vacuum the carpet. (See module 2201 05 004).

6. Fill the rotary shampoo tank 3/4 full with warm water. Add shampoo according to directions on the package label.

7. Wheel the machine to the furthest point from your exit. Plug it in.

8. Pull up on the shampoo release handle and let go. Turn on the machine. Foam is now being made.

9. Guide the machine from side to side. Pull up on the shampoo release handle and let go when you need more foam. Do not soak the carpet or it will take too long to dry.

JOB STEPS

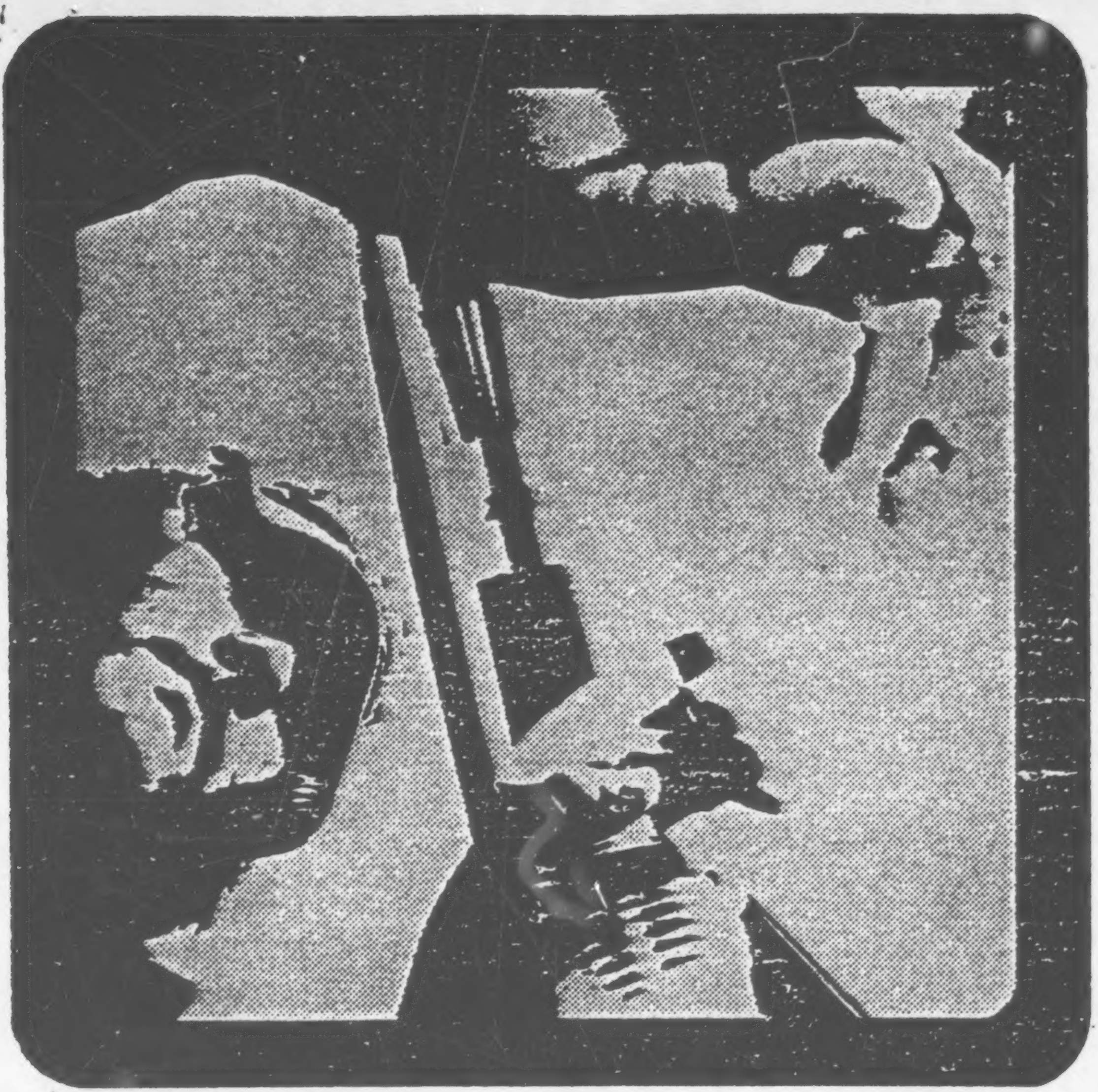
10. Do job step 8 until you have shampooed the entire carpet.

11. Take the rotary machine out of the area and bring in the wet vacuum. Wet vacuum the entire carpet.

12. Return the furniture to its proper location according to your map. Put cardboard or plastic squares under the legs of the furniture to avoid rust stains.

13. Return your equipment to the storage area and clean the equipment.

14. Ask your instructor to check your work.



building maintenance & engineering

unit: Carpet Care

capital area career center

module: 2201 05 3 date: 12-6-76 level: 2

skill title: Vacuuming a Carpet

developed & written by: Dwight Smith

visuals by: Sandra Starnaman

WORD GUIDE

PILE - yarns that make up a carpet.

CARPET RAKE - brush used to raise the pile of a carpet.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

How to vacuum a carpet.

AND IN ORDER TO DO THIS YOU WILL NEED:

upright vacuum cleaner

carpet rake

WE WILL KNOW YOU CAN DO IT WHEN:

You have vacuumed a carpet so that it is clean and the pile goes in the same direction.

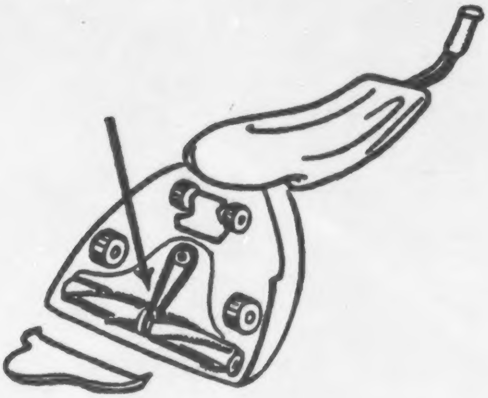
INFORMATION	MATERIALS	LOCATION OF MATERIALS
Why do you vacuum a carpet?		
To remove dirt that looks bad and wears out a carpet. Vacuum cleaning each day gets out much of the dirt.		

JOB STEPS

1. Get an upright vacuum cleaner.

2. Check the vacuum cleaner.

    a. Belt on rotating brush should be in place.

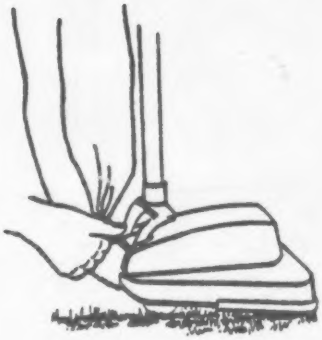


    b. Dirt bag should not be full.

    c. Electrical cord should not have breaks or exposed wire.

3. Take the vacuum cleaner to the work area.

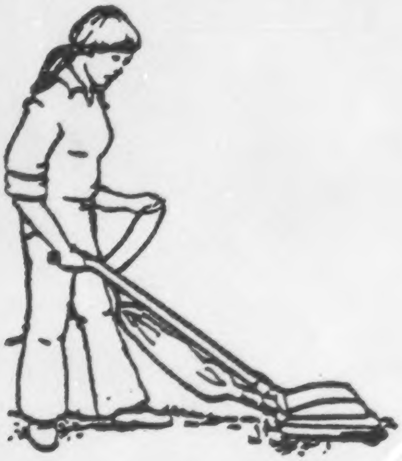
4. Adjust the brush height for the kind of carpet you are vacuuming.



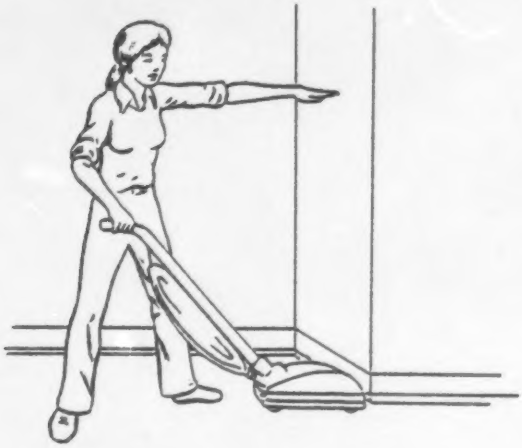
5. Plug in the machine and turn it on.

JOB STEPS

6. Start at one corner of the room. Hold the cord in one hand to keep the cord out of your way.



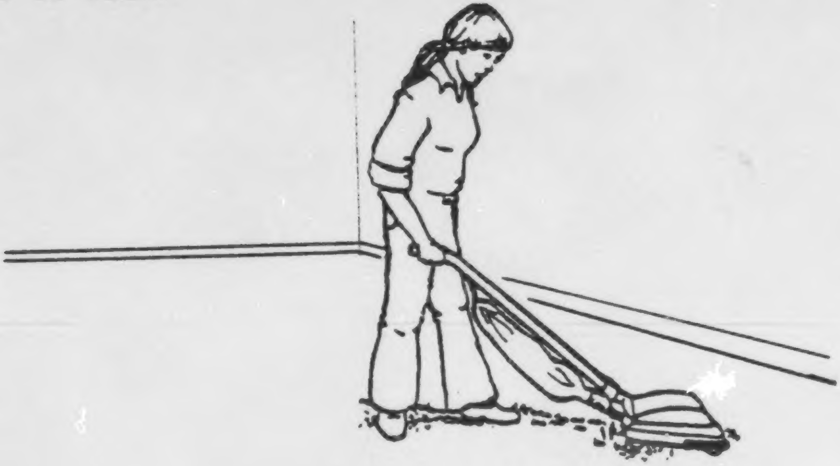
7. Move back one arm's length from the wall. You should be able to just touch the wall with the sweeper.



8. Push the vacuum cleaner to the wall and pull it back. Be sure it picks up the dirt.

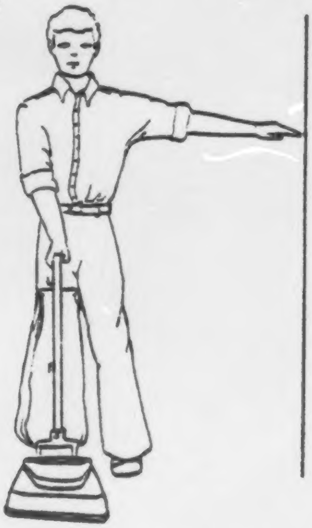
JOB STEPS

9. Push it towards the wall and angle it over a few inches when you pull it back.



10. Repeat job step 9 until you have moved over to the other wall.

11. Step back one arm's length and repeat job step 9 until you get to the wall you started at.



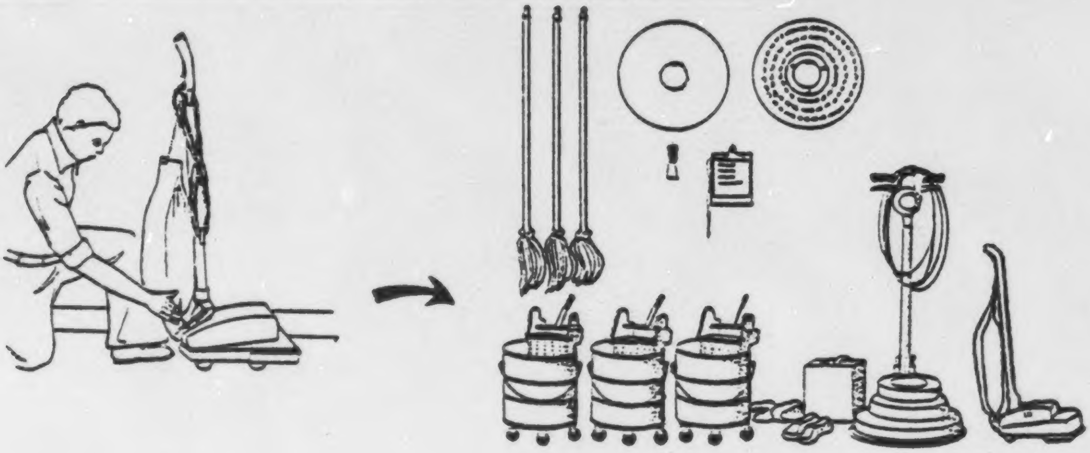
12. Repeat job step 11 until the room is clean. Check for small papers and dirt.

JOB STEPS

13. If the carpet is shag or has high pile, get a carpet rake from the storage area.

14. Starting at the far corner of the room, rake all the carpet in the same direction. Make the pile stand up. Leave no foot prints when you are done.

15. Return equipment. Make sure your vacuum cleaner is ready for the next use. (Check as in job step 2.)



building maintenance & engineering

unit: Carpet Care

capital area career center

module: 2201 05 004 date: 12-07-76 level: 2

skill title: Spot Cleaning A Carpet

developed & written by: Dwight Smith

visuals by: Sandra Starnaman

PERFORMANCE OBJECTIVE

You are going to learn:

How to remove stains and gum from carpets.

And in order to do this you will need:

Soft Clean Cloth
Dull Knife
Stain Remover
Dry Cleaning Stain Remover
Gum Remover

We will know you can do it when:

You have removed stains or gum from a carpet without damaging the carpet.

INFORMATION	MATERIALS	LOCATION OF MATERIALS
Why do we spot clean a carpet? Because many stains will not come out when you shampoo them. You must give them special attention to get the carpet clean.		

JOB STEPS

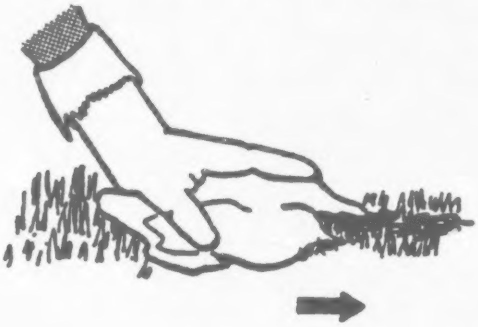
1. Pick up the equipment you need and take it to the area you will spot clean.

2. Find out what kind of stain you must remove. Choose a carpet cleaner that works on that stain by reading labels on cleaner.

3. Remove any excess from the stain. If solid, scrape with a knife. If liquid, soak up with a clean cloth.

4. Apply a small amount of the stain remover to a test area. Find some place out of the way or out of sight. See if the stain remover damages the carpet. Soak it up with your cloth.

5. If the stain remover does not damage the carpet, apply the remover to the stain. Wipe towards the center of the stain with a clean cloth.



6. Repeat job step 5 until the stain is removed.

7. Do the above steps with every stain on the carpet.

8. Return the equipment to the storage area.

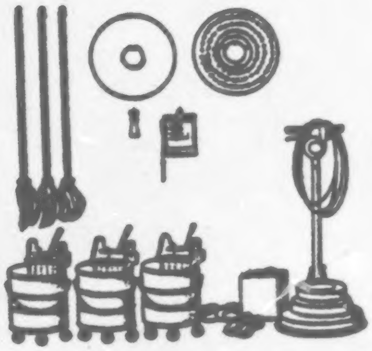
GUM

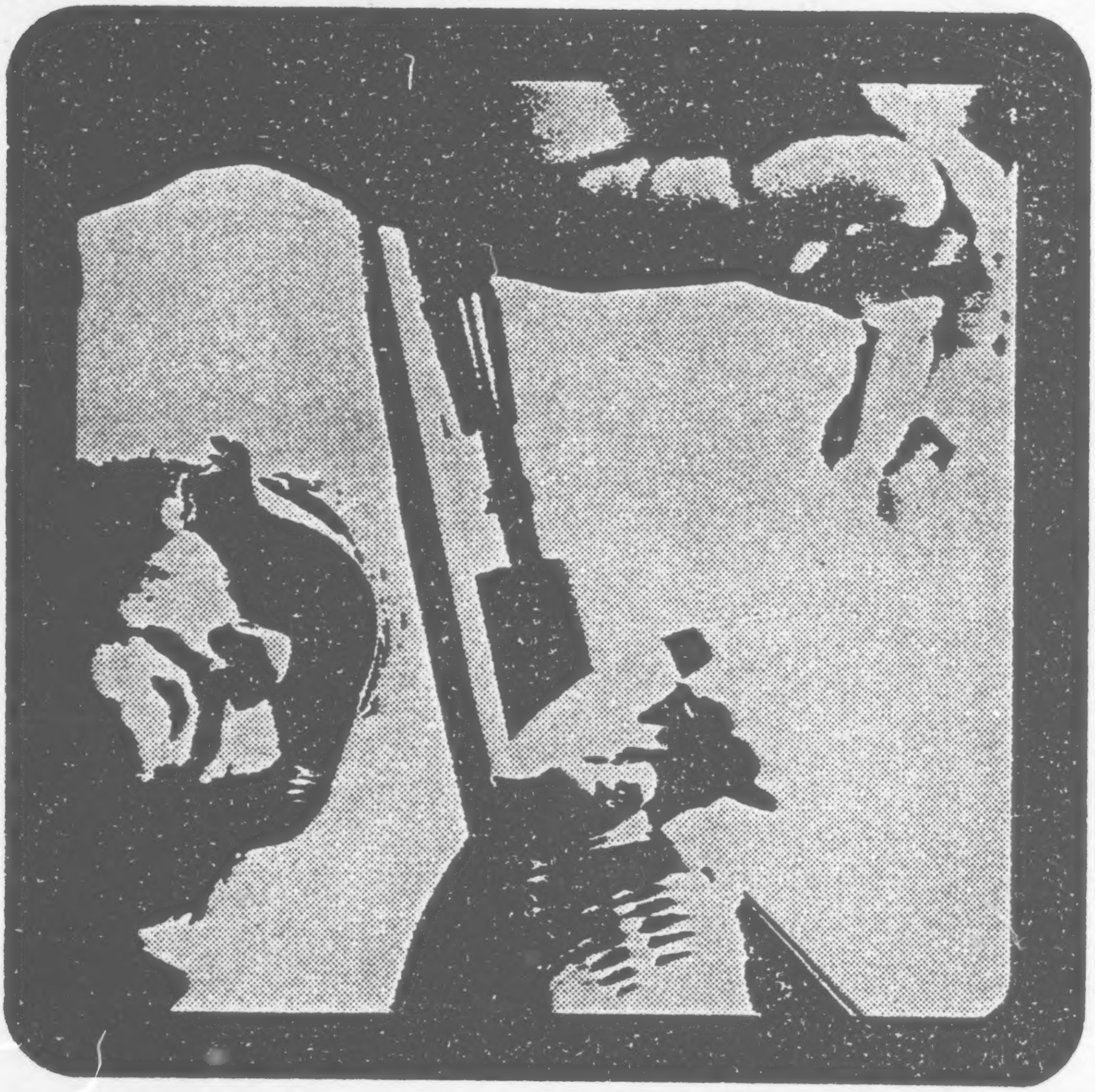
1. Spray the gum with gum remover. Scrape the gum with the dull knife.

2. Repeat job step 1 until the gum is removed.

3. Apply dry cleaning spot remover to the stain. Wipe towards the center with the clean cloth.

4. Return the equipment to the storage area.





building maintenance & engineering

unit: Carpet Care

capital area career center

module: 2201 05 5 date: 12-6-76 level: 2

skill title: Carpet Cleaning with Carpet Sheen

developed & written by: Dwight Smith

visuals by: Bill Draper

WORD GUIDE

CARPET SHEEN - a brand of carpet cleaner.

ROTARY FLOOR MACHINE - buffing machine.

PRESSURE SPRAYER - machine to spray carpet cleaner on carpets.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

How to clean a carpet with carpet sheen.

AND IN ORDER TO DO THIS YOU WILL NEED:

- upright vacuum cleaner
- hand sprayer
- 2 1/2 gallon pressure sprayer
- rotary floor machine
- special drive block
- small mop
- pail
- wringer
- water
- carpet sheen
- carpet pad
- pencil and paper

WE WILL KNOW YOU CAN DO IT WHEN:

No spots can be seen and the colors are bright on the carpet you have cleaned.

SOILED - dirt and grime

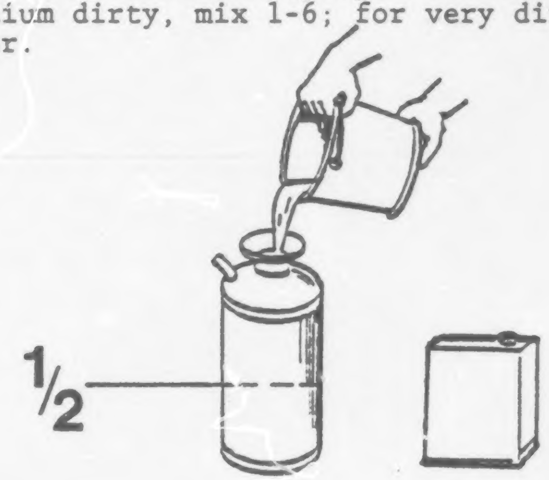
JOB STEPS

SPOT CLEANING

1. Get all the equipment listed on page 2 and take it to the carpet area you will clean. Use your checklist to be sure you have everything.

2. Vacuum the carpet area. Be sure no dirt is left.

3. Read directions on carpet sheen bottle for proper amount of soap and water. Then, fill hand spray. For mildly dirty carpet, mix 1-8; for medium dirty, mix 1-6; for very dirty carpet, mix 1-3 parts soap to water.



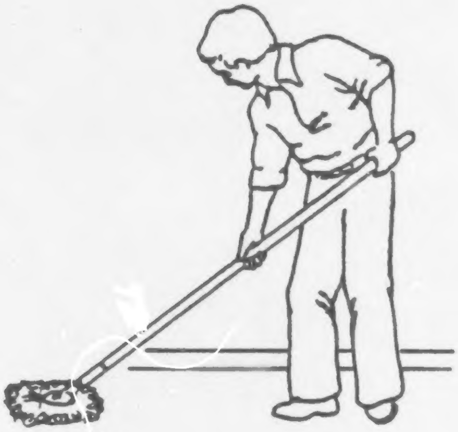
4. Spray the mixture on all stains, spots and heavily soiled areas.

5. Wait 5 to 10 minutes.

6. Wet the tip of the mop and wring it out.

JOB STEPS

7. Mop over the stains, spots and heavily soiled area. Start around edges of stain and work towards middle. Use short, quick strokes.



8. Repeat job steps 4, 5, 6, and 7 until the spots are clean. Shake the hand sprayer often to keep the solution mixed.

COMPLETE CARPET CLEANING

1. Make a map of the furniture in the area.

2. Move the furniture out.

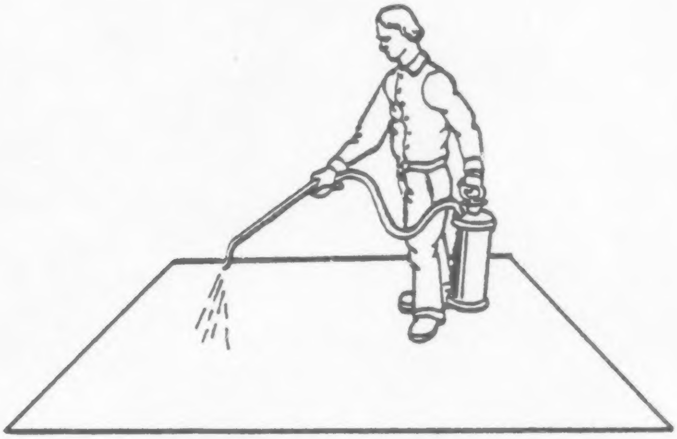
3. Vacuum the carpet area. Be sure no dirt is left.

4. Fill the pressure sprayer tank 1/4 with carpet sheen. Fill the tank with cold water. Shake well.

JOB STEPS

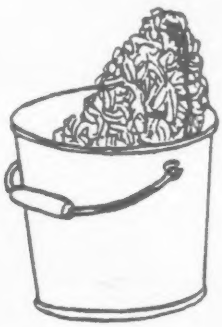
5. Turn on machine and spray all heavy stains and soiled areas. Hold the nozzle 1 inch from the heavy stains. Wet the spots.

6. Hold the nozzle 12 inches to 16 inches above the carpet. Spray a 12 ft. x 12 ft. area. Do not soak the carpet. Spray lightly.

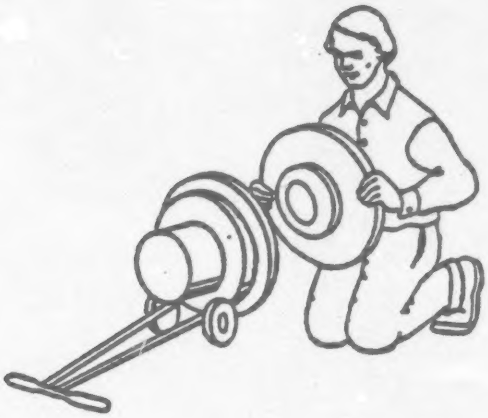


7. Wait 5 to 10 minutes.

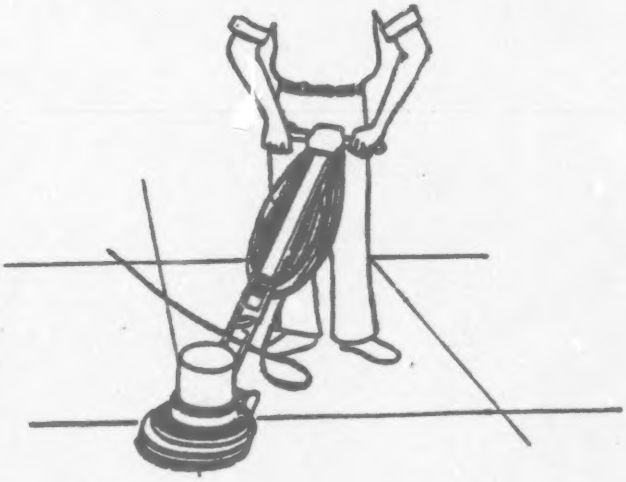
8. Put your carpet pad in cold water. Wring out with wringer. Put pad on the carpet.



9. Put the special drive block on the rotary floor machine. Put the machine over carpet pad.



10. Turn on the floor machine. Control it over the area you sprayed. Go over the area twice.



11. When you finish the area, repeat job steps 4, 5, 6, 7, and 8 on a new 12' x 12' area. Continue this until the entire carpet is clean.

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*********************************************
*                                           *
* NOTE - Turn the pad over when it becomes  *
*        soiled. The pad can be washed in   *
*        a washing machine.                 *
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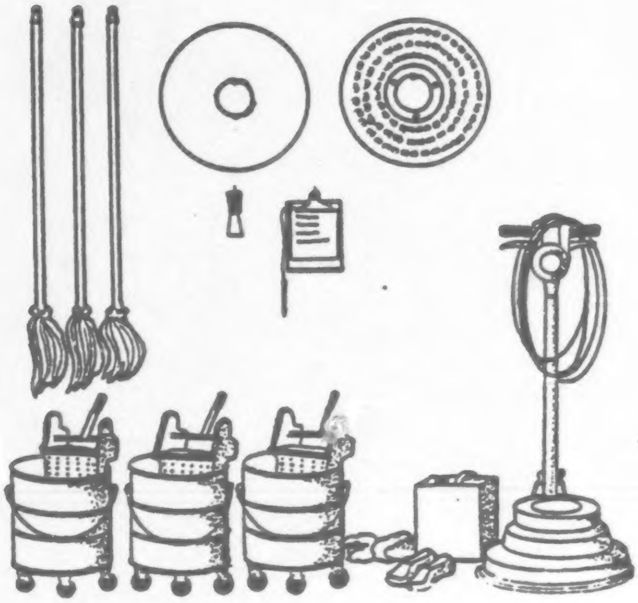
JOB STEPS

12. When you are finished, check for any spots you missed. Ask your instructor to check your work.

13. Clean all the equipment and return it to the storage area.



building maintenance & engineering

unit: Carpet Care

capital area career center

module: 2201 05 6 date: 12/6/76 level: 3

skill title: Care of Carpets

developed & written by: Dwight Smith

visuals by: Sandy Starnaman and Marie Gougeon

WORD GUIDE

REFUSE - (ref-use) trash, junk, dirt

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

How to take care of a carpet area for one week.

AND IN ORDER TO DO THIS YOU WILL NEED:

vacuum cleaner
spot cleaner
mop
pail
wringer
pressure sponges
floor machine
shampoo machine
short bristled brush
carpet pad
special drive block

WE WILL KNOW YOU CAN DO IT WHEN:

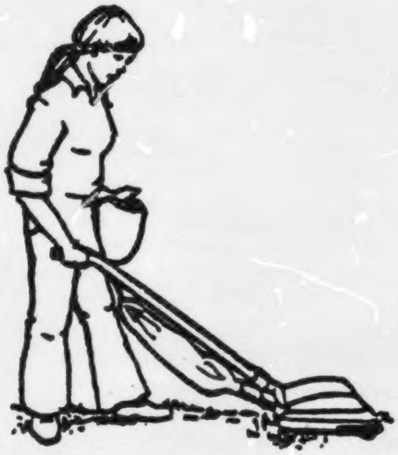
After one week, there are no spots or refuse on the carpet you have cared for.

INFORMATION	MATERIALS	LOCATION
What are you responsible for? Keeping a carpet area clean of all refuse, spots, stains and dirt for (1) one week.		
FOR REVIEW:		
Modules you have done:	1) Equipment Checklist	
2201 05 3 Vacuum cleaning 2201 05 4 Spot removal 2201 05 1 Dry foam shampoo 2201 05 5 Carpetsheen 2201 05 2 Shampoo with Rotary Machine	2) Carpet Care Performance Chart	

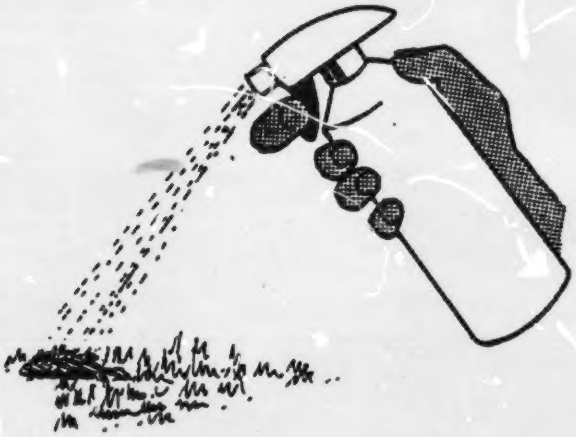
JOB STEPS

FIRST DAY:

1. Ask your instructor to show you the carpet area you are responsible for keeping clean.
2. Get your equipment for each step and check it on the equipment checklist.
3. Inspect the carpet area carefully. Note stains, spots and dirt.
4. Vacuum the carpet area. Be sure to get all the dirt.

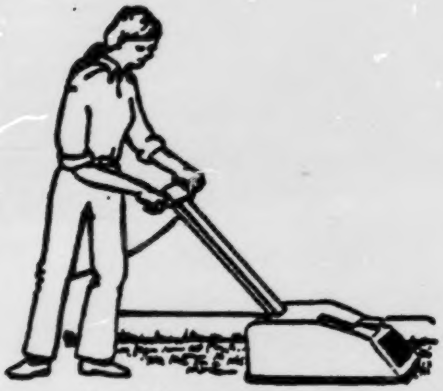


5. Spot clean all stains and spots.



JOB STEPS

6. Shampoo the carpet area. Ask your instructor which method is best for the carpet.



7. Vacuum the carpet when it is dry.

8. Clean the equipment you used and put it back in the storage area each day.

9. Fill out the performance chart for what you did. Give it to your instructor.

10. Repeat only the job steps that are necessary each day.